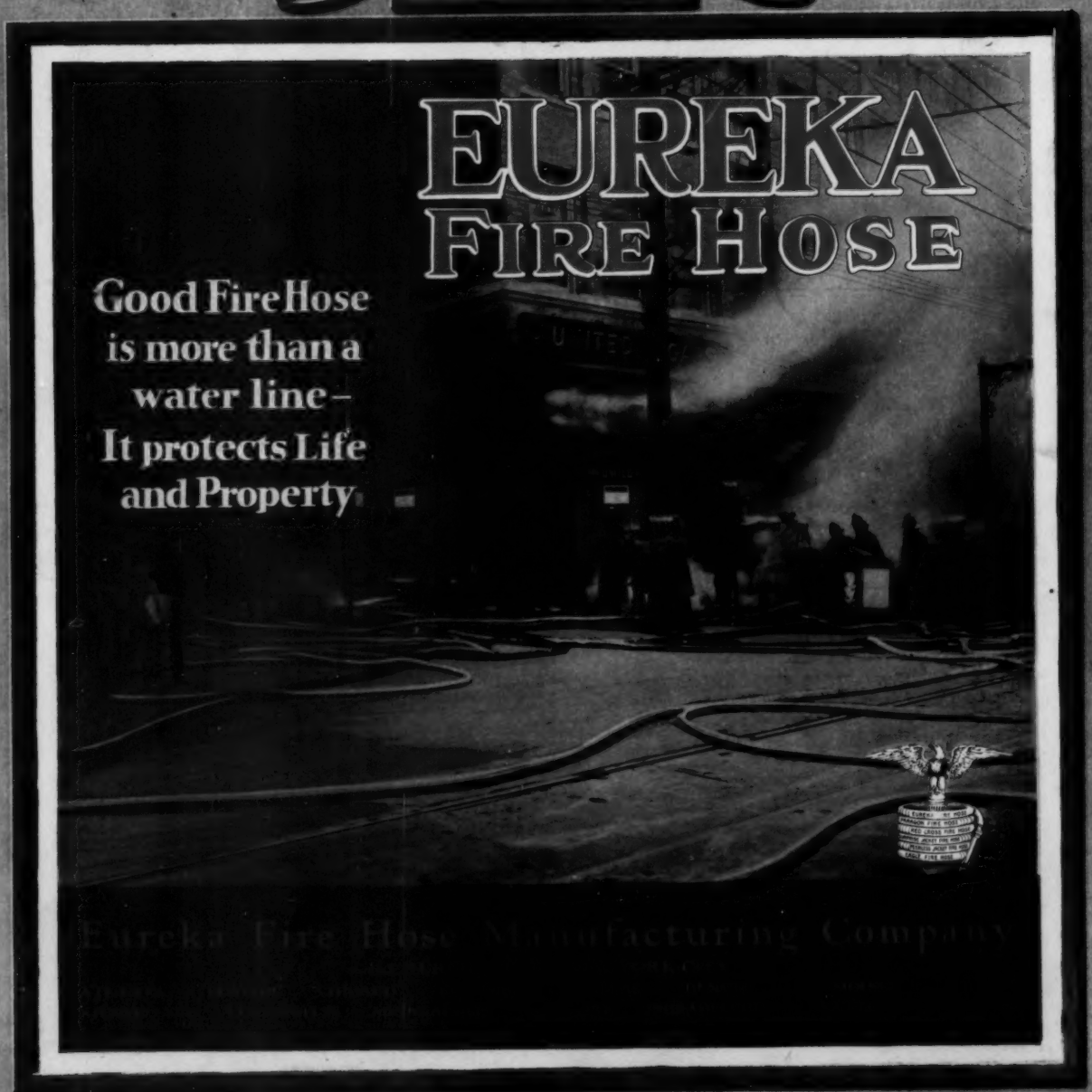
OHIO STATE UNIVERSITY
JUL 30 1930
LIBRARY

FIRE ENGINEERING

A Consolidation of Fire and Water Engineering and The Fire Engineer

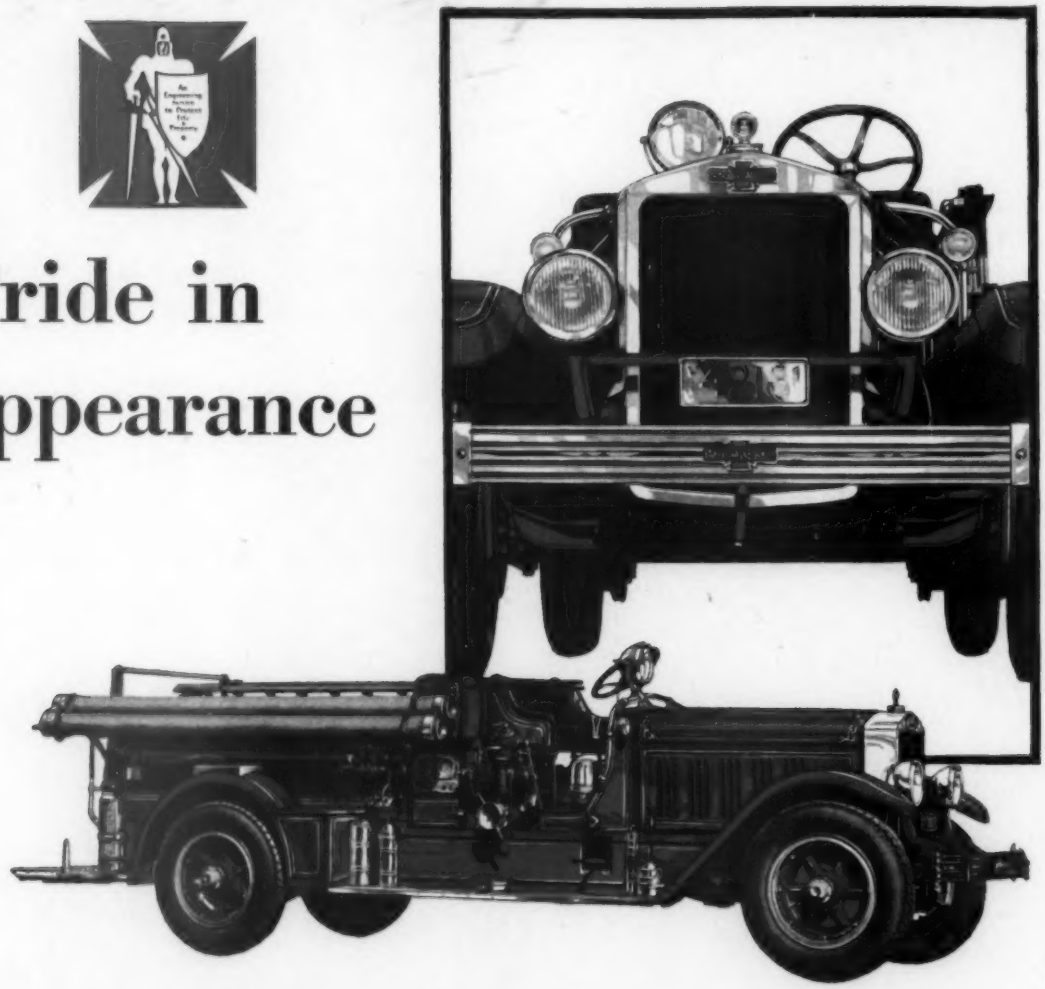
The Journal of the Fire Protection Profession

JULY 23, 1930


EUREKA
FIRE HOSE
Good Fire Hose is more than a water line – It protects Life and Property
Eureka Fire Hose Manufacturing Company

ESTABLISHED 1877 PUBLISHED BI-WEEKLY

Pride in appearance



...you have that, too, in MASTER SERIES APPARATUS

Service first, of course! But, with true American-LaFrance dependability and ruggedness, the new Master Series Apparatus brings you a new handsomeness of appearance.

Master Series Apparatus is as much at home on parade as it is fighting a fire. Low, graceful, with stream-line body and full crowned fenders, this apparatus gives a fleet, graceful appearance that any department can be proud of.

Do you know of the many features brought to fire apparatus design and construction by the Master Series? We will gladly give you complete information on the entire line...pumpers, aerials, city service trucks. Write American-LaFrance and Foamite Corporation, Dept. A-64, Elmira, N. Y. *Offices in all principal cities.*

LA FRANCE AND FOAMITE PROTECTION
AN ENGINEERING SERVICE
AGAINST FIRE

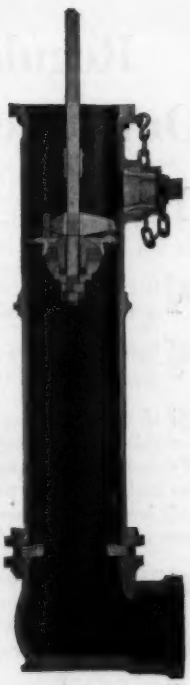
How will you bury the working parts of your fire hydrant?

Among the many superiorities of the Darling Fire Hydrant stands out the fact that it is unnecessary to excavate should trouble develop.

All internal parts, including the Main Valve Seat, Seat Gasket and Drip Valve Seats can be *removed through the top* of the Hydrant for inspection and renewal of parts. This is readily done, without digging, by one man with a small wrench.

Easy inspection and minimum maintenance are desirable since they naturally help the department's cost records.

We'll be glad to tell you about the many other reasons why Darling Hydrants are so favorably known to so many municipalities.



DARLING GATE VALVES

Darling Valve & Mfg. Co., Williamsport, Penna.

New York Oklahoma City Houston

757

The Journal of the Fire Protection Profession Since 1877

MEMBER
Audit Bureau of Circulations
Associated Business Papers

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

Published Every Other Wednesday

SUBSCRIPTION PRICE
U. S. and Canada $3 a year; Foreign $4; Single copies 25c

Issued by CASE-SHEPPERD-MANN PUBLISHING CORPORATION
Also publishers of "Water Works Engineering," "Municipal Sanitation," Technical Books, etc.
24 West 40th Street, New York City
Western Office, 30 No. Michigan Ave., Chicago

KARL M. MANN
President and Advertising Director

FRED SHEPPERD
Managing Editor

I. HERBERT CASE
Vice-Pres. and General Manager

H. S. ESSEX, Advertising Manager; ROBERT H. LOCKWOOD, Editor; N. N. WOLPERT, Asst. Editor

EDITORIAL ADVISORY BOARD

JOHN KENLON
Chief, New York Fire Dept.
Founder of New York Fire College

JOHN C. MORAN
Chief, Fire Department
Hartford, Conn.

GEO. J. KUBS
Former Deputy Chief N. Y. F. D.; Lecturer on Fire Fighting, Delehanty Institute, N. Y.

A. A. BELL
Chief of Fire Brigades and Engineer "American Fore" Group of Fire Insurance Cos.

Regularly, or Only Occasionally?

THE ball player who hung on to a fly only occasionally wouldn't stay long in the big leagues—or in *any* league.

¶ It takes fairly consistent performance to count for anything.

¶ Just so with the reading of a professional magazine like FIRE ENGINEERING.

¶ If you are going to keep in touch with things and grow with the development of fire department practice, it is essential that you make a regular practice of going through each issue of the paper you depend upon for your professional guidance.

¶ That our readers, almost to a man, *do* follow FIRE ENGINEERING regularly and with constantly growing interest is one of the chief reasons for the paper's success.

¶ Constant improvement is *our* aim—and we know it is *yours*, too!

The Publishers

CONTENTS

VOL. LXXXIII No. 15

JULY 23, 1930

Safeguarding Nitrocellulose Films in Use and Storage, by Harold F. Hunter 607
Characteristics of This Type of Motion Picture and X-Ray Film—The Slow Burning Film.

Importance of Discipline and Cooperation Among Volunteer Fire Companies, by Fred Shepperd 609
Discipline Must Be Enforced in Matters of Fire Fighting—Cooperation and Obedience Essential.

Chlorine Fires Require Unusual Precautions (Illustrated) 611
Pungent, Poisonous Fumes Make Caution Necessary—Direction of Wind Influences Methods of Operation.

The Round Table 613
What Steps Have You Taken to Prevent the Dumping of Gasoline into Sewers? Are Regular Inspections Made of Garages to Look for Violations? Do you Attempt to Regulate the Handling of Gasoline on City Streets?

With the Editor 615
Comments on Current Events and Live Topics by Our Editorial Staff.

Questions and Answers 617
Replies to Questions on All Manners of Subjects of Fire Fighting and Fire Prevention.

Recent Important Fires Specially Reported (Illustrated) 619
Four Killed in New Jersey Fireworks Blast—Burnings of Two Weeks.

Fire Department Activities 627
Newsy Notes from All Over the Country with Matters Firemanic.

Fire Department Improvements 628
Record of Business Activities in the Fire Protection Field.

False Alarms 632
Humorous Side of the Fire Protection Profession.

Contents of this issue copyrighted, 1930, by the Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York City.
Entered as second class matter April 15, 1919, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

AHRENS-FOX

is one of the country's oldest and largest builders of quality fire apparatus

GIVING you fine, dependable apparatus—the best that money can buy—is the purpose behind this plant of ours. To not only give you apparatus that will serve you long and well, but to give you excellent service whenever the need occurs.

The one thought that we want you to keep in mind when you are considering new equipment is this: when you get an AHRENS-FOX you've got the best!

THE AHRENS-FOX FIRE ENGINE COMPANY

CINCINNATI, OHIO

Kindly mention FIRE ENGINEERING *when writing advertisers.*

THE DIAPHONE

A compressed air operated public alarm with a distinctive and penetrating tone.

Credit Fairchild Aerial Surveys, Inc.

WHEN you have tried all other public alarm devices and find your need for a penetrating public alarm with a distinctive tone, unfilled, it is time that you installed a **Diaphone.**

The **Diaphone** is the old standby in public alarms. For years it has protected small municipalities throughout the country. It protected the U. S. Army Cantonments during the war and it can still be found protecting U. S. Government property. The **Diaphone** also has a fine service record in an entirely different field, one where the life and property hazard is equally as great as in the fire protection field—the lighthouse service. Along the coasts of this country, on the banks of the St. Lawrence River and on the shores of the Great Lakes, the **Diaphone** as a foghorn, has for years warned ships off the rocks. It was selected by two Governments for this important service because of its penetrating tone and reliability of operation.

The **Diaphone** has a tone that cries "Fire." It cannot be confused with whistles and other noises of the modern community. It will satisfactorily sound a code signal from a standard street fire alarm box. Furthermore, a storage reservoir with a capacity of 100 blasts, is provided so that an alarm may be sounded on the **Diaphone** even though the electric current should be shut off for a period of 24 hours.

Will operate from

standard street fire alarm box

Before you install a public alarm investigate the **Diaphone.**

A Bulletin describing the Diaphone more completely will be sent upon request.

Can be operated from

Peerless P.N.I. Transmitter located at fire station or phone exchange

THE GAMEWELL COMPANY

Newton, Mass.

"A Box A Block"

FIRE ENGINEERING

(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Journal of the Fire Protection Profession

VOLUME LXXXIII JULY 23, 1930 NUMBER 15

Safeguarding Nitrocellulose Films in Use and Storage

Characteristics of This Type of Motion Picture and X-Ray Film—The Slow Burning Film—Some Nitrocellulose Film Fires

By HAROLD F. HUNTER, Engineer, Chicago Board of Underwriters

THE use of the highly combustible nitrocellulose film for motion picture and x-ray purposes is becoming so general that it constitutes a very important hazard for the Fire Chief to consider. The following paper includes some excellent ideas on the regulation of this problem:

The commercial motion picture film consists of a thin, transparent strip of celluloid coated with a sensitized gelatine solution. The celluloid used for film puposes is a mechanical mixture of nitrated cellulose with camphor or other plasticisers, stabilizers, or solvents. Cellulose is the main sonstituent of all vegetable fibres and is a mixture of the elements, carbon, oxygen, and hydrogen. It is not easily affected by acids but when treated with concentrated nitric acid, cellulose nitrates are formed. The eventual product depends on the degree of nitration and may be divided into three general classes: that containing the lowest nitrogen content is used for the manufacture of pyroxylin plastic; the medium grade is used for manufacture of nitrocellulose motion picture film and pyroxylin lacquers, and the product of highest nitration is a high explosive known as gun cotton.

Manufacture of the Film

After nitration, the cotton is thoroughly washed (frequently a weak chemical solution used to check nitration process), then thoroughly dried, usually under pressure in presence of alcohol. The cotton is practically unchanged in appearance, except it has become harsher in texture and emits slight crackling sounds if rubbed and is now soluble in alcohol in its present condition. It is approaching the stage called gun cotton and will detonate upon friction or impact. The nitrated cotton is dissolved in wood alcohol and camphor and other plasticisers or stabilizers, the identity of which are carefully guarded as trade secrets, are added and the solution allowed to mix for several davs. This mixture becomes a thick clear syrup which is then poured on a polished steel wheel where it dries with the evaporation of the solvents and hardens and then passes through steam heated driers after which it is hung up to dry in festoons. The film is now about forty-four inches wide and two thousand feet long. A sensitizing emulsion prepared from silver bullion, nitric acid, and potassium bromide is applied to one side of the film and when dry the film is ready to be cut into strips 1⅜ inches wide and 100 to 1000 feet long. An idea as to the amount of silver bullion used in film making may be obtained when we learn that the Eastman Kodak Company of Rochester, N. Y., are second only to the United States Mint in the use of silver bullion.

Characteristics of Motion Picture Film

The use of stabilizers and plasticisers has been mentioned. The introduction of camphor is claimed to make the film non-explosive. This, however, is a mechanical mixture and camphor is volatile and tends under certain conditions, to gradually leave the film which originally had about 9% camphor in the makeup. Thus, the film as its life increases, tends to become more unstable and more liable to decomposition. It is a well known fact that nitrocellulose film in the open with plenty of air available, burns with almost explosive rapidity and violence, giving off terrific heat. But this known hazard is not its most serious property.

It will decompose under continued application of only a moderate degree of heat and decomposition once established, is self-sustaining and progressive, accompanied by formation of various gases or smoke which are combustible, explosive, and very poisonous. Laboratory tests indicate presence of carbon monoxide, nitrogen, dioxide, nitrogen and carbon dioxide. Death follows almost instantaneously from exposure to carbon monoxide, as is evidenced by the numerous instances of death caused by allowing an automobile engine to run in a closed garage. Nitrous fumes are equally poisonous but their effects are not so immediate, in fact the victim may not be aware of the danger until several days later when congestion of the lungs or pneumonia claims his life. This danger to life is a determining factor in deciding the means to be used to extinguish or control nitrocellulose film fires.

Cellulose Acetate or Slow Burning Film

Film of this material does not have the fire or explosion hazard of nitrocellulose film, neither does it possess the

"Our problem resolves itself into two main items: First, passage of ordinances for proper safeguarding of this hazard, with means for enforcement provided, to safeguard all new buildings erected for this class of occupancy; second, regular inspections of existing buildings erected prior to passage of ordinances, thoroughly familiarizing members of the Fire Department with the risks and eliminating all unnecessary hazards."

necessary qualities to withstand the intense momentary heat of the projector but will curl, soften and stretch, rendering it useless, but it is quite satisfactory for X-ray work even though its cost is about 50% greater than the nitrocellulose film. Until such time as the slow burning film is more fully developed, we must continue to safeguard this hazard with the most modern protective devices.

Fires Involving Nitro-Cellulose Motion Picture Films

A brief relating of the story of a few serious fires, involving buildings used for the storage of nitrocellulose films will serve to illustrate the importance of providing proper storage facilities with adequate fire protection for the hazard which is only too forcibly demonstrated by these fires and the necessity for permitting such storage only in buildings suitable for this class of occupancy. The most serious contributing defect in each case will be mentioned:

Fire at Salt Lake City, Utah, April 17, 1919

The building involved was one-story and basement, of ordinary joisted construction, occupied by multiple tenants, including six film exchanges. Film vaults were provided with capacity of 833 cubic feet, constructed of gypsum block, plastered on both sides, with metal ceiling and wooden floor. The vent consisted of a horizontal riveted metal pipe 8 inches in diameter and 30 feet long to the outer air. A nitrogen bulb electric light without vapor proof globe or guard, fed by flexible cord lead into vault through the vault door and wound around the steel pipe film racks.

The fire was discovered by an employee who warned all of the other employees who were thus able to escape before the explosion occurred, except two employees who were severely burned. The explosion blew out 55 square feet of the front wall of the vault. The fire was extinguished by hose streams manned by the local fire department.

Contributing Defects.—Unsafe installation of the electric light which caused the fire. Lack of automatic sprinkler protection. Inadequate vent provided.

The Colfax Building, Indianapolis, Ind., April 19, 1917.

The building involved was three stories and basement of ordinary joisted brick construction, occupied for apartments, large hall and the Oxon Chemical Company who used the basement of the rear section for the storage of motion picture films and scrap celluloid. Film vaults were provided with 8-inch tile walls and 6-inch reinforced concrete roofs with opening protected by single non-standard fire door. Instructions had been given that all film except that being worked on should be stored in vaults At the time of the fire the vault door was found wedged open and this rendered the automatic closing device inoperative.

The first indication of fire was an explosion followed by flame shooting from windows. The cause was thought to be sparking of commutator of the direct current motor which operated a film scraping machine. The motor was located only two feet from the scraping machine. The switch controlling the motor was found in closed position after the fire. This motor had been installed in violation of city ordinances, as no application had ever been received for its inspection and approval. Another theory was that film in wood boxes, near enough to steam pipes to cause sufficient heat to start decomposition and ignition, resulted in the explosion. Six people residing in the rear section on the first floor lost their lives. The fire was extinguished by use of ten hydrant streams under good pressure, from the city water mains.

Contributing Defects.—Unsafe installation of electric motor. Large quantity of film stored outside of vaults. Vault door wedged open. Vaults not sprinklered.

Dr. Harry Archer, on the Job as Usual

In fighting a five-story fire in East 58th street, New York City, thirteen firemen and also some of the tenants were overcome by carbon monoxide. Above is Dr. Harry Archer, New York Fire Department surgeon and honorary battalion chief, supervising the first aid treatment.

Pathe Film Company, Consumers Building, Chicago, Ill., July 1, 1917.

The structure involved was a 21-story and basement fireproof building, containing three film vaults located on the fourth floor. The walls and ceilings were of 12-inch tile, with concrete floor. The vaults communicated with each other through windows in the backs of vaults, common to all three, which also acted as vents through eight-inch by twelve-inch metal vents in upper window panels direct to alley. Standard double vault doors were provided on the opposite side of the vault. Vaults were lighted by electricity and the installation was standard. Film storage racks were of metal construction of a type approved for this use.

The fire originated in the middle vault and the doors were found closed and locked when the fire department arrived. The fire spread to vaults on either side through the window communications, and doors to vaults on either side were open, allowing the fire to involve packing and shipping room, terminating in an explosion. The fire was of short duration but developed such intense heat as to melt the wire glass windows of the floor above and crack the wired glass in windows on the floor below, and spread across a 12 foot alley to the eight story and basement Baltimore building, located at 18-22 Quincy Street, entirely destroying stock and fixtures of tailoring and publishing concerns occupying from the fifth to the eighth floors inclusive, with a loss of $15,000 to the building.

It was very fortunate that the fire did not occur during business hours as dense volumes of fumes and smoke filled the entire building through the open grill of the elevator shaft, rendering it impossible to use the regular exits. The fire was extinguished by the use of hose streams.

Contributing Defects.—Non-standard vent facilities creating severe exposure to adjoining building. Lax handling of film in packing and shipping room. Lack of automatic sprinkler protection. Note: Vaults were installed without being submitted to the Underwriters' for approval.

Joseph Mack Building, Detroit, Mich., November 16, 1917.

The building involved was a seven story fire resistive addition to the original building and cut off from the old section by hollow tile walls with openings protected by single sliding fire doors. The main occupancy consisted of motion picture exchanges, except a printer on the seventh floor. The building was equipped throughout with an automatic sprinkler system, supplied by a 25,000 gallon gravity tank elevated 25 feet, a 6,000 gallon pressure tank and a Siamese steamer connection.

Each film exchange contained from one to four film vaults with 8-inch brick walls, Kalamein type doors on ordinary hardware and the building formed the walls and ceilings. The fire originated in a film vault on the fifth floor, apparently from sparks caused by a short circuit in a temporary electric connection made from the lamp outlet in the ceiling of the vault, which ignited films piled on the floor, destroying the entire contents of the vault and also films on trucks and in open metal containers in the adjoining vault. Two automatic sprinkler heads in the vault and a total of fifty-five in all, operated promptly and did very effective work in controlling the fire. Both sprinkler tanks were drained. Hose streams were used by the Fire Department to extinguish small fires shielded from the action of sprinklers.

Contributing Defects.—Defective electrical installation. Storage of loose film outside of metal containers, causing the rapid spread of fire and severely handicapping the effective operation of sprinklers.

Film Exchange, Dallas, Tex., December 10, 1921.

The building involved was of ordinary joisted construction with open stair and elevators. Film vaults were provided but very poorly ventilated and films were stored without metal containers. The fire was discovered by a fire captain passing by, who was severely burned from the explosion. A nearby building was damaged and ten automobiles parked nearby in the street were almost a total loss. Fortunately no lives were lost, as the fire occurred at about 9:45 p. m. when the building was unoccupied. The fire was fought by hose streams from the outside. A loss of approximately $250,000 resulted.

Contributing Defects—Inadequate ventilation provided for vaults. Film stored without metal containers.

Harrisburgh, Pa., February 18, 1922

There were no film exchanges in this building, the principal occupancy being a store with apartments above. The basement was used for the repair of motion picture films. The fire department answered a telephone alarm of fire from this building and on their arrival they were not informed by the tenant that films were stored in the basement. As they entered the basement, an explosion occurred, blowing the firemen fifteen feet into the street and injuring 18 spectators all so severely as to require hospital treatment.

Contributing Defects—Criminal negligence in safeguarding the hazard of film working.

Fire in Home Caused by Motion Picture Machine, Orange, N. J., May 1, 1926

The moving picture machine in use was not approved by the Underwriters' Laboratories, and slow burning type film was not used. Every Saturday motion picture shows were

(*Continued on page* 630)

Importance of Discipline and Cooperation Among Volunteer Fire Companies

Discipline Must Be Enforced in Matters of Fire Fighting—Cooperation and Obedience to Orders Very Essential

By FRED SHEPPERD, Managing Editor of FIRE ENGINEERING

WHEN the subject of the "Importance of Discipline and Cooperation Among Volunteer Companies," was first considered it seemed a very easy one. But after careful reflection, and a review of a number of volunteer departments with which I have come closely in contact, a very much different angle presented itself. Discipline as applied to a paid department and discipline as applied to a volunteer department are two very different things. In one case the men make their livelihood in the profession but in the other case they contribute time and effort, to say nothing of the sacrifice of comfort, particularly in winter weather, with frequently no return whatsoever for their sacrifice. In view of these widely varying conditions discipline as applied to volunteer departments must be treated as a subject entirely different from that as found in paid organizations.

Volunteer department dicipline is self-imposed dicipline. The rules are frequently made by the members of the department themselves. The men subscribe to these rules, and, in the majority of cases, are willing to abide by them.

The foundation of discipline is provided by rules. Such rules must clearly state the responsibilities and privileges of all different classes of members. They must set forth very definitely those things which are required of members of the department, whether rank and file or officers.

Many a serious dispute could have been avoided had the department affected provided rules covering discipline. Nothing is more convincing to a member of an organization than to show him in black and white that he is wrong. The bugaboos of partiality and favoritism can forever be avoided if well prepared rules and regulations are issued, and enforced in every detail.

Even though service in the department is voluntary, members must realize that fire fighting is a serious business, and not sport. Upon becoming members of the department they must subscribe to this understanding and be governed in future work thereby.

Object of Discipline

Discipline in the volunteer organizations is of greatest value in connection with operating at fires. Ordinarily, and justifiably, it is relaxed around the quarters except insofar as house rules apply. *Good* discipline at fires is evidenced by quiet work, absence of shouting, placement of lines and equipment so as to confine the fire to the smallest possible area, and extinguish it without delay.

On the other hand *poor* discipline is marked by confusion, lots of action but little progress, uncertainty as to the progress of the fire, unnecessary fire and water damage.

Effective fire department work is built on obedience and unanimity of purpose. The officer in command must have a very clear idea of just the method he is to employ in handling a fire, and must likewise have instant obedience on the part of the members.

If the officer does not fully appreciate the task ahead of him, and if he does not have obedience on the part of his men, he may find his company acting in a manner similar to many volunteer fire companies where the men, as soon as the apparatus rolls up to the fire all make a rush for the burning building to take a look over the situation and then come back and get the equipment which they think they need.

And here's where you can pick the well trained and disciplined company. A company of proper training, and with proper discipline, upon arriving at the fire, deliberately takes the equipment needed and then proceeds to the blaze instead of making the dash to the building to give it the "once-over," and subsequently returning to the apparatus for equipment.

Another point of weakness in undisciplined departments is the tendency on the part of men to pick their own job. "Bill" will be a little afraid of tearing his trousers so he will not do any ladder work, but instead, picks up some tool which he might be able to use on the street or within the building on the ground floor. "Jack" doesn't like water, particularly in cold weather, so he takes an axe and starts opening up doors throughout the building. Jim likes to use a 6-foot hook, so he gets busy ripping plaster off the ceiling somewhere in the neighborhood of the fire. Tom, being particularly agile and possibly a little proud of his prowess, is always first up the ladder, but usually to no purpose. This idea of selective work at a fire is all wrong, and is the result of improper discipline. It can be rectified by enforcement of rules, and assignment of men beforehand to those line of duty for which they are best fitted. Deviation from their particular work at any fire should be forbidden, unless there is an important reason therefor.

Let it not be said of us as was remarked of a small mid-western volunteer department that since the property owners of the town have become familiar with the work of their newly formed volunteer department they don't insure against *fire* any more . . . they insure against the department.

Cooperation

A few years ago the speaker was present at a fire in a comparatively large eastern city. He was on hand early enough to see the various companies rolling in. Each company took the position which it thought best and put its lines in operation accordingly. The result was several independent units fighting the same fire but each fighting along its own plan. It is not surprising that in this partciular case the fire spread through an adjoining building necessitating a general alarm. While this was a paid department, the same principles would hold for a volunteer department. At a fire, only one man should be in command. The best plan is to have the first officer arriving at the fire assume command until relieved by a *superior* officer. I'm referring to department rank and not an officer's opinion of himself.

When there is but one man in command, he can employ the apparatus as he sees fit and make sure that all exposures are covered as well as all channels through which fire may extend are properly protected. No fire company likes to assume a minor role at a fire where there is a big audience watching, but efficient fire fighting demands that each man consider himself a cog in a large machine which is setting out with a definite task in mind. Just as each member is a cog in a machine, depending upon his fellow members

"To company officers I might say this: Don't be backward about taking orders, even if the whole town is on the side-lines, including your intimate friends. You are serving under the rules of the department into which you entered with the promise to abide by those rules. Take your orders like soldiers—you'll make good generals."

for efficient operation, so is the machine itself dependent upon the proper functioning of each unit, for if one cog in the machine makes up its mind it wants to turn in the opposite direction, it may slow things up a little.

To company officers I might say this: don't be backward about taking orders, even if the whole town is on the sidelines, including your intimate friends. You are serving under the rules of the department into which you entered with the promise to abide by those rules. Take your orders like soldiers—you'll make good generals.

Outside Service

Occasionally your company will be called upon to render aid to some neighboring community. Upon arriving at the scene of the fire remember that the officer of the local department is familiar with the ground, and it is *his* fire. Take your orders from him, and work heartily with him. It is his responsibility to see the fire brought under control and it is his misfortune if it gets away, for he'll get the blame anyway.

Suggestions are always acceptable, particularly if they are well founded, but be a good sport and don't show your feeling if a suggestion you make is not taken.

Cooperation

The question of fire department cooperation is one which has bothered volunteer departments since they were first formed. Even back in pre-civil war times large city records show a conspicuous lack of cooperation. In fact the old volunteer departments frequently stopped enroute to a fire to fight each other, and in one instance several companies located in the downtown district of New York had to be disbanded on account of such combats.

Friendly Rivalry Should Not Interfere with Cooperation

We can always excuse friendly rivalry if it does not interfere with the function of the department—fighting fires.

In the early days of New York, a volunteer fireman, belonging to engine company No. 14 conceived what he thought was a magnificant idea to win a victory for his company. A new district had been opened up, and the firemen were not very well acquainted with it. But the volunteer, in rambling through the locality noticed a fire hydrant, and impressed its position on his memory. One night a fire occurred in his section and the volunteer made a dash for the hydrant. He saw an old barrel near, slapped it over the hydrant and sat on it. He began to smoke and assume a graceful and careless attitude as though he were an accomplished actor. An opposition company dashing up in front of the hydrant caused the volunteer to smile and to chuckle. He was thinking of how proud No. 14 would be when they came along. He would then get off the barrel and reveal his treasure. But he didn't get the chance. Another company coming along saw the man on the barrel, and something about him made them suspicious. Perhaps he seemed too lazy and indifferent on the barrel. They rolled him off his seat, lifted up the barrel and discovered the hydrant. Alas for that zealous fire fighter and his genius! He did not follow company No. 14 for a long time after. As for hydrants it is understood that he never again sat on one.

Needless to add that such rivalry is not in vogue at the present time.

In the elements involved in the makeup of a volunteer fire department, no other two have as great a bearing upon the success and effectiveness of the department as a fire fighting unit than have good discipline and willingness to cooperate.

(From a paper presented before the annual convention of the Maryland State Firemen's Association, Baltimore, Md., June 11, 1930.)

Photo, Courtesy Factory Mutual Record

Proof That Even a Water Tank Is not Immune

Contrary to popular conception, even a water tank may burn. Fire broke out in a wooden tank mounted on the roof of a tannery in Detroit and firemen had to climb on the frame work to properly direct their hose streams.

Sun Ignites Film Scrap Heap

Rays of the sun started a fire in the scrap film house of the Pathe Exchange near Bound Brook, N. J., and caused a stampede of three hundred girls employed there. Flames spread rapidly to the main storage house where seven tons of film were kept. At first employees attempted to fight the blaze with hand extinguishers and when the fire continued to advance, a general alarm was sounded.

The odor of burning film was easily distinguished and a stampede started. All were out of the building when the first company arrived. The flames were confined to the storage building and the main building where additional amounts of film were stored, was saved.

Georgia State Association Formed

At a meeting held in Macon, Ga., on May 14 the Georgia State Firemen's Association was formed and by-laws adopted. It was decided to hold the next meeting the latter part of this year, the exact date and the place of meeting to be decided later. The following officers were elected:

President, Chief H. L. Taylor, Rome.
Vice-President, Chief V. W. Crawford, Cornelia.
Secretary, J. W. Albertno, 121 East Oglethorpe Avenue, Savannah.
Treasurer, Chief H. J. Williams, Macon.
Executive Committee, Chiefs John Terrell, Chairman, Atlanta; D. W. Brosman, Albany; John B. Kennedy, Augusta; J. E. Porter, Thomasville; E. F. Lester, Athens and H. B. Rich, Bainbridge.

Indiana Arson Cases Have Increased

Alfred Hogston, State Fire Marshal, has issued the following statement in regard to the Indiana State Fire Marshal Department activities for the six-month period from January 1 to July 1, 1930.

The Arson Division has been unusually active, due to the great number of fires of suspicious origin; 113 such fires were investigated, and ten were re-investigated for new evidence. There were ten confessions of arson secured, and fifteen arrests made. Of the cases taken to Court, six convictions were secured. There were three acquittals and one jury disagreement.

In the Inspection Division for the same period of time there were 1,106 inspections of property for fire hazards; 136 new orders were issued as the result of such inspections. There were 589 compliances on orders, leaving 388 orders yet pending.

Mr. Hogston said:

"There have been an unusual number of arson cases and fires of suspicious origin in the last six months, and evidence indicates that in at least ninety per cent of such cases the motive was to collect the insurance. And further, in practically every such case the property was over-insured."

Fire House Completed in Eastwick, Pa.—A new fire house has been completed in Eastwick, Pa.

Nine New York City Firemen Fined—Commissioner John J. Dorman of the New York Fire Department fined nine members for intoxication, being absent without leave and insubordination. One member was fined thirty days' pay.

It's Not Often a Chlorine Plant Fire of This Magnitude Is Encountered.

Fire followed an explosion in the plant of the Solvay Process Company near Syracuse, N. Y., recently, and while a number of huge chlorine tanks were directly exposed to the fire, the firemen effectively covered exposures and the tanks escaped unscathed. Apparatus from Syracuse was called to assist the local fire-fighters.

Chlorine Fires Require Unusual Precautions

Pungent, Poisonous Fumes Make Caution Necessary—Direction of Wind Influences Methods of Operation

THE chief difficulty encountered in operating at chlorine fires is the result of the presence of chlorine gas. It is a greenish-yellow gas of a strongly pungent odor, and is about two and one-half times heavier than air. At 29 degrees Fahrenheit (or at 10 degrees Fahrenheit under 125 pounds pressure) it becomes a liquid, of amber color. With water the chlorine forms chlorine hydrate, a solid.

Chlorine fumes are dangerous to inhale, but their characteristic odor warn against their presence and thus afford some protection to firemen engaged in operating around fires involving chlorine.

Mixed with hydrogen or acetylene, chlorine explodes in sunlight. Paper, textiles, fibers, etc., soaked in certain oils will ignite if plunged into chlorine gas. Sodium, potassium, phosphorus, bismuth, antimony, arsenic, gold leaf, brass-bronze, copper bronze and gold burn spontaneously in an atmosphere of this gas. Practically, its hazard in industrial plants is rather one of casualty than of fire. It is suffocating, causing a contraction of the respiratory organs by its action on the tissue moisture.

Liquid chlorine is usually found in steel cylinders, one ton drums, or 15-ton tank cars. It is used in paper mills, bleacheries, water purification plants, flour mills, etc. Bleacheries usually take a supply in steel cylinders.

The gas is to be feared chiefly on account of its suffocating effect and possibility of its escape causing panic. It may under certain circumstances cause fire. Containers heated by exposing fire may be destroyed by direct combination of the steel with chlorine. Practical experience, however, seems to show that the hazards are not as serious as might be feared, and that most emergencies can be handled without excessive damage being done.

Cylinders and drums are equipped with soft plugs. These occasionally let go. Cylinders have from time to time exploded due apparently to presence of oil. Chlorine tank cars are of steel, usually 30,000 pounds liquid capacity, insulated with four inches of cork and jacketed with steel. Manhole cover at top carries safety valve set at 200 pounds, two gas supply valves, and two liquid draw-off valves. Liquid pipes inside tanks have ball check valves to stop any rapid flow. Steel dome protects valves. At fires the upward draft caused by materials burning usually carries the gas from leaky or ruptured cylinders, but inside heavy buildings, confined gas is liable to seriously injure firemen.

At the Fire

In operating on a chlorine fire, the first precaution is to keep to the windward side, if possible. This applies whether operating outside or inside buildings. By keeping to the windward side, the gas will be carried away from the men and thus make safe and efficient operation possible. Should there be extensive leakage of chlorine, all persons in the path of the fumes should be warned to move to safer locations. This is a very necessary precaution if the quantity of chlorine involved or exposed is large.

It is good policy to use plenty of water on a chlorine fire, for the water accomplishes two objects: It extinguishes the fire and reduces the chlorine concentration in the air by forming, with the chlorine, chlorine hydrate. The evaporation of gas from this substance is slow.

Should the plant be located in the suburban section of a city, and should only a small quantity of water be available, if a large amount of chlorine liquid is being freed, a trench should be dug to draw the liquid to a lower spot. The pool formed can later be treated with water. Loose earth thrown on the liquid retards evaporation.

Where chlorine tanks are punctured above the liquid, only gas will escape, and this will cool off the contents so that leakage will be slow. On the other hand, if leakage is below the liquid level, it will continue until the top of the liquid reaches the opening, and then slow down to a gas leakage.

As noted above, minor leakage of chlorine gas at a severe fire is not likely to be serious, as the gas is carried upward and dissipated with the products of combustion.

First Aid

There is hardly a chlorine fire at which someone is not gassed. The following first aid treatment may therefore prove of use where medical talent is not immediately procurable:

1. Remove patient at once to open air and away from all gas fumes.
2. Place patient flat on back with head slightly elevated.
3. Give one half teaspoon essence of peppermint or a moderate dose of Bromo-seltzer or whiskey.

This will relieve the tendency to cough and sooth the inflamed membrane, allowing the passage of air promoting the action of the respiratory organs.

4. The person affected should resist as much as possible the impulse to cough.
5. A mustard plaster on the chest will give prompt relief.
6. While serious after-affects are not to be expected, a physician should always be called.

Snakes Form a New Hazard for Firemen

Judging from the conversation at many of the fire stations, it is bad enough being a fireman, without having to be a tropical wild game hunter as well. Through inspections made by the New York Board of Fire Underwriters, a large serpent chamber was uncovered as part of the pet shop in New York City. On the lower floor are housed puppies, chicks, kittens, monkeys and other playful pets.

William D. White, Superintendent of the Bureau of Surveys of the New York Board of Fire Underwriters sent a letter to Chief Kenlon, describing the possible dangers to firemen in the event of a fire:

"The lower portion of this building is occupied by Henry Bartel's with a large stock of birds and animals. On the second floor, one flight up, there is a frame partitioned room about ten by sixteen feet, with one window opening on the street. This room contains six or more pythons and boa constrictors not in cages or boxes but loose and allowed to climb on the pipes both at the side walls and up near the ceiling. The frame door giving entrance to the room may be locked generally, but what would happen in case of a fire and the firemen were to enter the room, either through the door or the window and these serpents were in the throes of agony from smoke or fire?

"It occurred to me that you would probably welcome information of this situation and the matter is referred for such attention as you may deem proper."

Newport News, Va., Has New Station—A new fire station has been completed in the Kecoughtan section of Newport News, Va. It costs $11,000, and was erected on the site of an old fire house. The station will house a pumper.

Long Island to Protect Forest Areas—The State of New York is considering plans for better fire protection for the large serpent chamber was uncovered as part of a pet sible that six additional fire towers will be erected, and for each tower a fire truck and a two-man crew will be provided.

Anderson Provides Rural Fire Apparatus—Anderson, Ind., has provided special apparatus for making runs to the suburban areas. A special pumper has been placed in the central fire station for answering country runs. No charge will be made for these out-of-city runs.

Chief Rosar of Scranton Resigns

Peter J. Rosar, head of the Fire Department of Scranton, Pa., for fourteen years, resigned from the Bureau of Fire following the appointment of a captain to fill the vacancy caused by the death of Assistant Chief Charles W. Harman. According to his own statements, he das dissatisfied over the appointment of the new Assistant Chief. Assistant Chief E. B. Lewis, who had been on duty at headquarters since 1918, has been named acting Chief.

Ex-Chief Peter J. Rosar

Chief Rosar has had a long service with the department which dates back from the old volunteer days, when he fought fires as a civic duty to his home town. After serving for five years as a volunteer fireman he was named a paid fireman in 1902. Following this he was captain for ten years and in 1914 was made Assistant Superintendent. When former Chief Henry Ferber was retired two years later, Chief Rosar was named to fill the vacancy.

Although a strict disciplinarian, he was admired by his officers and men.

The *Scranton Republican* comments on the resignation editorially as follows:

"Three thoughts stand out prominently in connection with Chief Rosar's resignation. One is the personal charm of the man filling the position he is now voluntarily vacating. Another is the faithfulness of his service which continued for more than two decades. Another is his capacity as a fireman, proved on many occasions, when great conflagrations were quickly subdued.

"The services of Chief Rosar extend back to the volunteer days when he helped fight fires for the glory of it and in accordance with his views of the loyalty a citizen owes his home town."

Singing Jimmy Smith Safe in New York

New York City, calloused and sophisticated, was afforded a treat when "Singing Jimmy" Smith, formally known as Battalion Chief James Smith, of the Los Angeles Fire Department, arrived as official representative of the Glendale, Cal., Chamber of Commerce. Of course with him came the small organ that is almost as much a part of Jimmy as his department uniform.

He arrived to say hello to Chief John Kenlon and Commissioner John J. Dorman. And he had a few things to say to the Mayor, but "Jimmy" Walker was out of town.

But a treat such as Jimmy and his organ could not leave the city without being accorded proper recognition. He was taken to the municipal radio station WNYC where he sang a number of his catchy songs. He is more than a singer—he is a composer as well, and many have felt the sharpness of Jimmy's wit at the I. A. F. C., and Pacific Coast chiefs' conventions.

Chief Kenlon Sails for Europe—Chief John Kenlon, of the New York Fire Department, sailed on the White Star liner Britannic for a month's trip to Europe.

Mrs. Frank G. Reynolds Married—Mrs. Frank G. Reynolds, widow of the late Chief of Augusta, Ga., was married to John S. Haskard at Westfield, N. J., on July 1.

Saratoga Springs, N. Y., Issues Bonds—A bond issue has been floated in Saratoga Springs, N. Y., to provide for a new fire station, fire alarm headquarters, fire alarm system, 85-foot aerial and a 1,000-gallon pumper.

Rescue Company Formed in Hempstead, N. Y.—A building is now under construction in Hempstead, N. Y., to house Engine No. 4. A rescue company of twenty-four men has been formed and the men are now receiving instruction in this work. A Mack truck to be known as Rescue Co. No. 1 has been purchased and delivery is expected the first week in August.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

IN some fire department circles "hell," as a descriptive word, is all too common. And no wonder, for serious life and fire catastrophes are being experienced far too frequently. Inspectors are constantly on the watch for persons who delight in defying fire prevention regulations designed to safeguard the safety of others.

One of the more modern violations is that brought about by the general use of the automobile and the increasing number of public garages.

As each car is cleaned and overhauled, some disposition must be made of the waste gasoline, and to many garage attendants, the easiest method is to empty it in the sewer. Perhaps if only one was guilty of this practice, there would be little danger. But there are many who dispose of gasoline waste down the sewer line.

Two things must be considered. Gasoline is a volatile liquid that is easily vaporized and a sewer is a completely enclosed passageway for waste material. It is not long before the entire sewer becomes filled with explosive gasoline fumes. Only a tiny spark is necessary to start manhole covers popping and to spread flames over a large underground area, burning out telephone cables and power lines.

The question that is treated in this issue appears in the box on this page. In the box on the following page is the problem that will be discussed in the next issue. Should you have a question that you would like to see treated in this department or if you have some comments that you would like to add to the next discussion, write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th St., New York, N. Y.

HERE IS THE PROBLEM

What steps have you taken to prevent the dumping of gasoline into sewers?

Are regular inspections made of garages to look for violations?

Do you attempt to regulate the handling of gasoline on city streets?

The Question

In many cities it is necessary that a permit be secured in order to have the city sanction the operation of a public garage. Before a permit is issued, an inspection is made to see if all the city regulations have been complied with. In this way the fire department can be certain that sumps or traps are installed to prevent gasoline from entering the sewer. Although not universal, the larger cities have regulations to control the hauling of gasoline on city streets. The replies received follow:

Stephen J. DeMay, Chief, Detroit, Mich.: The dumping of any inflammable liquids in the sewers of the city of Detroit is prohibited by the inflammable liquid code, and where such liquids are present, sumps must be provided.

Before a garage is allowed to operate, it must first receive a license and permit to operate, and before this license or permit is issued, the same is inspected by the Safety Engineering Department to see that they comply with all the provisions of the garage ordinance. In addition, inspectors from the Fire Prevention Bureau of the Fire Department make periodical inspection to see that they are maintained as the law intended and where violations exist, order them corrected.

The hauling of gasoline through our streets is regulated by the inflammable liquid ordinance of our city.

C. E. Carlson, Chief, Tacoma, Wash.: We prohibit the dumping of gasoline and oil into sewers.

Inspection is made of all garages about once a month.

No attempt is made to regulate the hauling of gasoline on the city streets, except that the hauling must be done in regular gasoline trucks with ground chain. Hose must be used to transfer gasoline from truck to storage tanks.

We have had three accidents in the last five years—once a tank truck backed up against the curb and broke off the piping and let out about ninety gallons of oil, no fire resulting from the accident.

On another occasion a truck was hit by a street car and turned over, depositing 200 gallons of gasoline into the gutter which ran about 100 feet to the sewer. No fire resulted.

The third accident occurred at a railroad crossing, where the truck overturned due to the impact of the collision. The spilled gasoline, about 500 gallons, took fire. No great damage resulted, as the accident happened on a sandy flat with no buildings nearby. The fire was put out with sand and foamite.

Ruben B. Hook, Chief, Gretna, La.: Regular inspections are not made of garages. No attempt has been made to regulate the hauling of gasoline except on our ferry boats. I believe it is a U. S. Government order which prohibits the transportation of gasoline across the Mississippi River.

Michael P. Leonard, Chief, Erie, Pa.: We have a city ordinance prohibiting the dumping of gasoline into sewers, and have no trouble from that source.

Our Inspectors' Bureau, created by ordinance, makes regular inspections of garages and other buildings where similar hazards exist. Should a violation be found a check-up is made until the conditions have been remedied.

Section 5, City ordinance says: "That it shall be unlawful for any person, firm or corporation to transport gasoline to or from any gasoline storage tank or station within the fire limits of the City of Erie, unless such owner or owners of said tank or station shall have a permit from the Chief of the Fire Department or his assistant.—$100 penalty for violating this ordinance.

Frank W. Fuller, Chief, Brainerd, Minn.: We are at present working on an ordinance to govern the handling, storage and transportation of inflammable liquids in our city.

It is my opinion that all towns should have an ordinance covering these things, as any one may see by reading FIRE ENGINEERING that gasoline is becoming a greater hazard each day. It is a common occurrence to walk into a shop and find a mechanic cleaning machine parts in a pan of gasoline and smoking at the same time. As a matter of fact we all become careless with some things if there is not someone to continually remind us of the folly of our habits. So I say, have ordinances covering any hazardous condition, and enforce them.

W. R. Price, Chief, Springfield, Mo.: No steps have been

taken up to the present time to prevent the dumping of gasoline into sewers. We do, however, make regular inspection of garages and all other buildings in the business district.

The hauling of gasoline on city streets is regulated by ordinance No. 15,974 passed July 6, 1928, making it unlawful for any corporation, company, person or persons to sell and deliver gasoline or motor vehicle fuel from a tank wagon or other vehicular container, whatever, in or on any public street, avenue or alley, within the limits of the city of Springfield, Missouri, and providing a penalty for the violation of this ordinance.

Edward Millspaugh, Chief, Wyandotte, Mich.: We have on ordinance regulating the dumping of gasoline and other inflammable matter into sewers, and have not had more than one or two violations since its being in force.

Garages are inspected quite frequently. The only regulations relative to the transportation of gasoline on city streets is that exacted by the state code.

W. F. DeBolt, Chief, Connellsville, Pa.: During my entire term of office I have caught but one garage dumping gasoline into the sewer. All I had to do was to notify the manager as to the danger of such practice and he readily complied with my request.

I make regular inspections of all garages and their work shops. The washing of parts in gasoline is the worst thing I have to contend with, even though Pennsylvania does not permit the use of gasoline to clean parts.

We have no ordinance regulating the hauling of gasoline through our streets.

F. C. Brown, Chief, Fairbury, Neb.: We have an ordinance giving the chief control over the handling of all explosive and combustible material. Have never considered the subject of gasoline being dumped into sewers.

As in the case of all business houses, regular inspection is made of garages.

For transportation through city streets, gasoline must be in tank wagons or red containers such as are used for that purpose, and delivered by daylight.

Knowlton F. Pierce, Chief, Kearny, N. J.: Have never had any trouble or complaints about gasoline being dumped into sewers.

Inspection of garages is made from two to four times a year.

No attempt has been made to regulate the hauling of gasoline through streets as most conveyors used hereabouts are of the proper type.

Wm. Hirdes, Chief, Belleville, N. J.: We have a town ordinance which forbids the dumping of gasoline, etc., into sewers. Investigations and enforcement is handled by our Engineering department. Regular inspections are made of all garages.

No attempt has been made to govern hauling of gasoline through streets, as we are a bordering city of Newark which regulates same.

Clyde H. Pritchard, Chief, Jackson, Mich.: A city ordinance prohibits the dumping of gasoline or oil into sewers from garages or dry cleaning establishments.

Inspection of such establishments are made on an average of twice each month.

We do not permit gasoline to be hauled, except in vehicles equipped for it.

C. A. Wolverton, Chief, Port Angeles, Wash.: We are not troubled to a great extent by the dumping of gasoline in sewers.

We make garage inspections on an average of once a month and compel them to haul out their waste gas and oil. Some of them use this waste oil for oiling the street.

We do not have any regulations covering the hauling of gasoline over our streets.

W. A. Buel, Chief, Parsons, Kans.: We have taken no steps to prevent the dumping of gasoline into the sewers.

Quarterly inspection of garages is made and is a part of our fire prevention work.

No attempt is made to regulate the hauling of gasoline on the city streets.

James Welsh, Chief, Eau Claire, Wis.: We have no ordinance covering the dumping of gasoline and similar inflammables in sewers. Through our regular inspections we are able to handle the garage problem very satisfactorily.

Safety first gasoline delivery conditions are not abused here, with the result that no regulation has been adopted.

Chas. L. McCarthy, Chief, Worcester, Mass.: Every garage must have a gasoline trap or else they are not allowed to connect to the sewer.

Regular inspections of garages are made in order to check on any violations.

We do not attempt to regulate the hauling of gasoline on city streets.

Wm. Daggett, Chief, Springfield, Mass.: The dumping of gasoline into sewers is handled by the State Department of Public Safety.

To detect violations, regular inspection of garages is made.

As we have had no trouble relative to the hauling of gasoline on city streets, we have no ordinance covering it.

T. B. Parks, Hannibal, Mo.: We believe that we have been successful in stamping out the practice of dumping gasoline into sewers but, once in a while we find some one who does it.

Garages are inspected every two weeks, and all gasoline is hauled in tank wagons with drag chain attached. We get a very good support from all proprietors of garages who are willing to help in this work.

Chief of Fire Dept., Saint Albans, Vt.: Dumping of gasoline into sewers is governed by a city ordinance. Garages are inspected regularly, and the hauling of gasoline on city streets is controlled by state law.

R. Chrisman, Chief, Roswell, N. Mex.: We have no ordinance to prevent the dumping of gasoline in sewers, but merely request that such practice be discontinued.

Monthly inspection of garages are made. We make no attempt to govern the hauling of gasoline through streets.

I. S. Zorb, Chief, Butler, Pa.: An ordinance forbids the dumping of gasoline into sewers in Butler. Regular inspection of garages is made, but no action has been taken to regulate hauling of gasoline through streets.

John Bolender, Chief, Lancaster, N. Y.: No steps have been taken to prevent the dumping of gasoline into sewers. Occasional inspection of garages is made, but no regulation of hauling of gasoline on city streets is in force.

John E. Saulnier, Chief, North Adams, Mass.: We have had no trouble with the dumping of gasoline in sewers. Monthly inspection is made of garages.

T. W. Alleman, Chief, Altoona, Pa.: We have an ordinance prohibiting the dumping of gasoline in sewers. Garages are inspected regularly.

Jos. Waidelich, Chief, Topeka, Kans.: An ordinance forbids the dumping of gasoline in sewers. No regular inspection of garages is made, nor do we attempt to regulate the transportation of gasoline through streets.

Geo. A. Philbrook, Chief, Middleboro Mass.: No move has been made to prevent the dumping of gasoline into sewers. Regular inspection of garages is made.

Henry E. Whitney, Jr., Chief, Brattleboro, Vt.: No action has as yet been taken to prevent the dumping of gasoline into sewers.

The only inspection of garages made, that done by the state. No regulation covering the transportation of gasoline has been formulated.

HERE IS THE PROBLEM

Do you have an insurance policy to compensate volunteer firemen for injuries received in the line of duty?

If not, how do you compensate your firemen and what are some of the adjustments made?

What is your opinion of compensation insurance?

Answer to Previous Question

John H. Wohlers, Asst. Chief, Charleston, S. C.: The specification of all hose purchased by this department requires the manufacturer to stamp coupling with their own name, month and year of delivery, in letters ¾ inch in size. When this hose is issued to the various fire

(*Continued on page 626*)

With the Editor

Fireworks and "The Fourth"

The Fourth of July passed this year with the usual number of minor accidents to celebrants who expressed their joy at the anniversary of the country's independence by making as much noise as possible. Strange to say, however, the worst casualties of the day happened not to those who were celebrating but to a manufacturer of fireworks and his family. The plant, which was situated in New Jersey, from some unknown cause blew up and the explosion resulted not only in its destruction, but also in the death of four persons, all relatives of the proprietor.

Probably, when statistics of the accidents and fires resulting from the vociferous celebration of Independence Day are at hand, it will be found that there was a lessening in this respect from last year. Certainly the authorities of the various cities tried hard enough to enforce regulations prohibiting the setting off of firecrackers and other dangerous noise producing devices.

In New York City, where the regulations are very strict, there was some "bootlegging" in fireworks. In the outlying boroughs of the big city, in cases where the surrounding towns either did not have prohibitive ordinances or failed in a serious effort to enforce them, dealers stationed themselves as near the border line as possible and did a thriving business with the citizens of the metropolis.

However, there was comparative quiet in the streets of New York and other of the larger cities. In some other smaller places, the din was considerable and the small boys—and some of the larger ones—shot off their fire-crackers to their hearts' content. Under the circumstances, that there were no very serious casualties reported among the celebrants seems only a little less than miraculous. It shows that the propaganda for a safe and sane Fourth has at last taken firm root. May it grow!

As to Convention Exhibits

There can be no question as to the value and desirability of the exhibits at the conventions of International Association of Fire Chiefs, the New England Association of Fire Chiefs, and other large organizations. They are educational in their nature and they bring the Chiefs and the manufacturers in closer harmony. But the matter of the wisdom of exhibits at the conventions of the smaller associations, such as divisional and state organizations is a matter of considerable controversy.

Recently two diametrically opposed ideas have come to notice. In the one case—that of the Indiana Firemen's Association—the organization invites manufacturers to exhibit fire apparatus and appliances, and in order to encourage such exhibits, furnishes space free to all who care to take advantage of it—a very generous move.

In another case—that of the Southeastern Division of the International Association of Fire Chiefs—it was decided at the last convention of the body to exclude exhibits entirely, on the ground that it was a useless expense to the manufacturers and that they would not derive enough benefit from the showing of apparatus and appliances to warrant the spending of money for shipment. Incidentally, considerable credit is due to the Fire Department and citizens of Charlotte, N. C.; to the former for their hard work under their Chief to make the convention the success it proved to be, and to the latter, from the fact that the entire expense of the entertainment of the visitors was paid for by funds provided by the people of the city at the call of the Chief.

It is a significant fact that another association closely allied to the fire protection field—the American Water Works Association—has adopted the policy of no exhibits at the annual meetings of its sections, and only allows such exhibits at the annual convention of the parent body. This action has been taken in cooperation with the Water Works Manufacturers' Association. This has been done on the ground that exhibits at the smaller gatherings do not include sufficient benefits either to the members of the Water Works or the Manufacturers' Association to warrant the expense.

Perhaps this should suggest a similar policy in firemen's associations.

Honoring the Ex-Volunteer Fireman

A unique plan to honor the ex-volunteer firemen of Texas has been evolved by an association in Waco. It is crystalized in the idea of a memorial building to be erected in that city by popular subscription. According to the plan any citizen of the state who contributes $100 or more to the building fund will have his or her name inscribed on a bronze tablet to be erected in the proposed structure.

The building, which, according to the architect's plan, will be of one story and of a pleasing type of architecture, will be the only one in the state devoted to the purpose and will have an inscription over the entrance: "Ex-Volunteer Firemen's Memorial." It is to be erected on the grounds of the Texas Cotton Palace, a state exhibition, which has an annual attendance, it is said of hundreds of thousands of people. There is to be an exhibit of old apparatus and other items of interest in the building.

It is said that in Waco alone there are approximately

500 former volunteers, and of course a much larger company of such men in the state. That they deserve this recognition of their service to the community is self-evident.

Such a plan of recognizing the faithful and unselfish service of the volunteer fireman, it need hardly be pointed out, is a graceful recognition of the great service such men throughout the country have rendered and are rendering to their fellow citizens. Such service is given without compensation and often at great personal sacrifice, and it should have just such recognition as this proposed memorial will give. The Texas plan may furnish others with a suggestion as to what can be done to honor this class of public servant, who so unselfishly gives his time and risks his life for the people's good.

The Eagle Doesn't Mean a Thing

There are so many things that one accepts as a matter of course, that it is not all surprising that few, even in the fire department service, have been curious to know why there are eagles mounted on the front of firemen's helmets. A few believe that it is significant of the onward-to-victory attitude or a symbol of some lofty inspiration. But that is not so.

Long, long ago, to be exact somewheres around 1825, a sculptor was commissioned to design a commemorative figure of a volunteer fireman. It stands today in the graveyard of Trinity Church. The hero is depicted issuing from the flames with a babe resting on one arm while the other he holds a trumpet. By some flight of fancy, the sculptor placed an eagle on the front of the firemen's helmet. At that time the helmets were free from any ornaments of this kind.

The little ornament met with popular favor, and since every fire company in those days designed its own uniforms, it came into general use. It has remained on firemen's helmets ever since, even though it is always getting dented, bent, and knocked off, and requires frequent attention to keep the eagle shining in its glory.

Texas Firemen to Erect Memorial

Funds are being raised in Waco, Texas, for the erection of a memorial building to honor the former volunteer firemen of Waco and other departments in Texas. The building will be erected on the grounds of the Texas Cotton Palace, a state exhibition. All persons who contribute one hundred dollars or more will have their names on a bronze plate to be placed somewhere in the new building.

In the memorial building will be placed the only two steamers left in the state, a number of photographs, relics and other objects of firemanic interest.

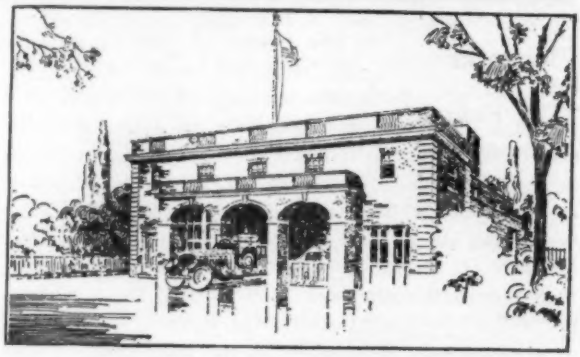
London Firemen Stage Annual Show

The annual display of the London Fire Brigade was held at Battersea Park, London. At this time Field Marshal Sir William Robertson presented medals and certificates. The photograph shows firemen extinguishing flames in a frame shed.

New Station Proposed for Mansfield

A fire station of pleasing design is being considered for Mansfield, Mass., just off the banking and business section of the town.

It will be of cream brick with limestone trimming. The center portion of the building is two stories high with one-story wings. It will occupy a ground area of sixty-four feet wide by seventy-two feet deep. The right wing contains the coal



Architect's Drawing of Mansfield Fire Station

and boiler rooms and the equipment for a compressed air whistle. Just above this is the entrance to the vestibule and the watch room. At the right of the watch room is a staircase to the second floor. There is the chief's office and beyond this the signal apparatus room and the room containing the battery equipment.

The apparatus room floor has space for five pieces of apparatus. It is expected that the building will be ready for occupancy by the middle of October.

151 Trapped in German Mine Blast

According to the latest figures, 151 miners lost their lives in mine explosions one thousand feet underground at Neurode, Germany. Of this number eighty-two died in the chamber where the blast occurred, fifty-five in the next tunnel and the remainder in nearby tunnels and shafts. In an attempt to save the lives of 130 men in the next sections, it was necessary to slam the air doors shut after the explosion, leaving eighty-one to their fate.

Rescuers report that they found bodies with hammers and drills still clutched in the hands, the engineer of the little electric locomotive with his hand still on the throttle, a car-loader slumped beside the dump car and one man sprawled across the alarm telephone.

Carbon monoxide gas has long been known here and the Wenceslaus mine has always had a particularly bad reputation as a death trap. The precautions taken include setting off a charge of dynamite before a new shift goes on in order to shake any of the nearly exposed pockets of gas loose. It is also forbidden to use vibrating hammers in drilling for fear of opening up a deadly well of poison. Nevertheless there is no absolute safeguard except the closing of the mine, which is said to be unprofitable anyhow and to produce a poor grade of coal.

Explosions of carbon monoxide have been known to have a force sufficient to disrupt a mass of stone and coal weighing more than 1,000 tons, according to the Prussian Bureau of Mines, which further points out that the most dangerous moment is in the use of explosives which must be discharged electrically from a distance and when the men are all above ground.

It is impossible to ascertain the cause of the catastrophe now, but it is assumed that it must have been started by a driller coming unawares on a pocket.

The average family income of these miners is one dollar a day. More than nine hundred miners were discharged after July 1 owing to business depressions.

Pueblo Places Conduits Underground—Work has been started on an underground system of cables for the fire alarm system of Pueblo, Col.

Waverly, Ia., to Get Apparatus—A movement has been started for Waverly, Ia., to receive fire apparatus for the protection of rural property. A plan is being considered for raising funds.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Soda on Flowing Sulphuric Acid

To the Editor:

I would appreciate your early answer to the following question. This was asked in the oral test for Battalion Chiefs at Los Angeles.

Question: You are in charge of a fire in a warehouse and several drums of sulphuric acid ruptured, the acid running out of the door and down an alley. In a corner nearby there is a large supply of bicarbonate of soda. What would you do?

W. R.

Answer: With reference to flowing acid, the following might be said:

If you were in charge of a fire in a warehouse and several drums of sulphuric acid had ruptured, the acid running out of the door and down an alley, and you had a large supply of bicarbonate of soda handy, the very best thing to do would be to throw the bicarbonate of soda on the flowing acid. The soda would neutralize the acid, and the reaction would generate a large quantity of carbon dioxide gas. The chemical reaction would probably be quite vigorous so that the soda should be thrown from a little distance and applied in small quantities. Be on the alert for sputtering of acid.

Six Lines to Deck Gun

To the Editor:

Will you please inform me as to the factors for changing 3″ hose to 2½″; two parallel 3″ lines of hose to a single line of 2½″ and also the correct method to solve the problem below:

Two engines, one at 210 lbs. pressure and the other at 200 lbs. pressure, are each pumping through three lines of hose made up of 50 feet of 3″ and 50 feet of 2½″, to a turret nozzle located wagon. The turret nozzle has a 2½″ tip and is 10 feet above ground.

As noted above all six lead lines are 100 feet in length, the first length of each of the six being 3″ inch and the second length of each being 2½″. What is the turret nozzle pressure? What is the discharge?

On each side of the hose wagon is one Y connection with a 2½″ inlet, to account for the extra lead lines. The third lead line attaches directly to a single 2½″ connection leading to the turret pipe.

In other words, the siamese connections are put on inlets to provide means for two lines instead of one to the particular inlet.

Cordially yours,

R. L. W.

Answer: The factor for changing 3″ hose to 2½″ hose is 2.6. The factor for changing two parallel 3″ lines of hose to a single 2½″ line is 9.35.

The first step is to reduce the entire layout to the equivalent of a single line of 2½″ hose.

The factor for reducing three 3″ lines to a single 2½″ line is 20.4. The factor for reducing three lines of 2½″ hose to a single line of 2½″ hose is 7.75.

50 ÷ 20.4 = 2.45 feet of 2½″ hose, single line.

50 ÷ 7.75 = 6.46 feet of 2½″ hose, single line.

Then the three lines from an engine to the deck gun are equivalent to 2.45 plus 6.46 or 8.91 feet of 2½″ hose, single line.

Combining the layouts of the two calculated lines from the two engines to the deck gun we have 8.91 ÷ 3.6, giving us 2.47 feet of 2½″ hose, single line. Thus the six lines of hose, reduced to a single line give us 2.47 feet of 2½″ hose single line.

The next step is to average the engine pressures, and this is done by adding the two engine pressures and dividing by 2, or 200 + 210 ÷ 2, giving us an average engine pressure of 205 lbs. This pressure is considered the pressure at a single engine supplying the 2″ nozzle through a single line of 2½″ hose 2.47 feet in length.

The elevation of the deck gun above the engine outlet will be 10 — 4, or 6 feet. The back pressure in the deck gun due to the 6 feet elevation will be 6 x .434 or 2.604 pounds. Friction loss in the wagon pipe and its fittings, will be taken at 15 pounds, which is but an approximate figure for this loss.

Then we will have to deduct from the engine pressure before solving for nozzle pressure 2.6 + 15 or 17.6 pounds. The engine pressure available for overcoming friction loss in the hose line and giving nozzle pressure will be 205 minus 17.6 or 187.4 pounds.

In making these calculations we have entirely neglected the fact that two lines on each side of the deck gun feed through a siamese connection while the third feeds through a plain connection. However, the 15 pounds friction loss takes this situation into account.

Then the problem may be stated as follows: A single engine at 187.4 pounds pressure pumping through a single line of 2½″ hose 2.47 feet in length and through a 2″ inch nozzle.

Nozzle pressure = engine pressure divided by (1.1 + K × L).

Where "K" is a factor depending upon hose and nozzle diameters, and for 2½″ hose and 2″ nozzle is 1.55; "L." is the number of 50 foot lengths of hose in the line or 2.47 ÷ 50, or .0494.

Then N.P. = 187.4 ÷ (1.1 + 1.55 × .0494)

= 187.4 ÷ (1.1 + .07657)

= 187.4 ÷ 1.17657

= 159 pounds nozzle pressure.

Discharge = 30 x d x d x $\sqrt{P}$ where "d" is the nozzle diameter in inches and "P" is the pressure in pounds per square inch.

Pressure = 159 pounds, and the square root of the pressure, 12.6.

Then discharge = 30 × 2 × 2 × 12.6, or 1,512 gallons per minute.

Placement of Ladders

To the Editor:

Will you please be kind enough to advise me as to how you would answer the following questions.

(a) What size ladder would you place to a 4-story window of an ordinary building?

(b) Would a 40-foot ladder go in a 4-story window averaging 12 feet to the story and allowing two feet for the window sill, foot of ladder placed 10 feet from building? I figure this as follows:

Height of sill 38 feet, one side of triangle. Base from building 10 feet, other side of triangle. Hypothenuse 39½ feet.

(c) What do you understand by ordinary building? Buildings in Rochester average 10, 11, 12 feet to the story. There are some buildings which have 15, 17, 19 feet to the first story and the stories vary in height.

I say a building averaging 10, 11 or 12 feet to a story is an ordinary building and that a building in which the stories vary in height and have more than 10, 11 or 12 feet to the story is an extraordinary building.

Answer: A 40-foot ladder would be used to reach the window on the fourth floor of an "ordinary" building.

In most fire department promotional examinations a story is taken at 12 feet although 12½ feet is sometimes considered the average height of a story. Old buildings, as a rule, are lower per story than newer buildings although the present tendency in building construction, particularly of skyscraper design, is to lessen the height of the story.

I. A. F. C. Graduates 1930 Class

Thirty-two chiefs and officers of many fire departments outside the state of California, graduated from the course conducted at the Los Angeles Fire College under the auspices of the International Association of Fire Chiefs. The graduation exercises were held at the Fire College.

The men enrolled April 1, 1930, for the ninety-day course which consisted of class work at the college and practical work at the drill tower and the various branches of the fire service. This included the Fire Prevention Bureau and the Bureau of Fire Investigation. In addition, the men were assigned to night duty.

The graduation exercises were attended by many persons prominent in public life. The speakers included Hon John C. Porter, Mayor of Los Angeles; Charles H. Lum, Assistant General Manager, National Board of Fire Underwriters; Ernest F. Coop, President, Pacific Coast Association of Fire Chiefs; Jay Stevens, Secretary Pacific Coast Association of Fire Chiefs and California Fire Marshal; Ralph J. Scott, Chief, Los Angeles Fire Department, and Samuel H. Dodd, Assistant Chief, Los Angeles Fire Department.

Congratulating Chief Wasson on His High Record

From left to right, Jay Stevens, California State Fire Marshal; Chief Ernest F. Coop, President, Pacific Coast Association of Fire Chiefs, Chief Norval E. Wasson, Huntington Park, Cal., and Chief Ralph J. Scott, President, International Association of Fire Chiefs.

Chief Norval E. Wasson of the Huntington Park Fire Department received an average of 98.48 per cent for the course, the highest grade. The class average was 91.20 per cent.

The following men constituted the graduating class:

Akin, R. E., Beaumont, Texas
Barr, Jewel A., Compton, Cal.
Barton, S. R., Culver City, Cal.
Benford, Chas. C., Beverly Hills, Cal.
Boatright, Edward L., Portland, Ore.
Bolz, Cleveland L., Pasadena, Cal.
Boyle, Edward P. Honolulu, Hawaii
Connor, Gilbert S., El Paso, Texas
Crampton, Geo. M. Santa Monica, Cal.
Eastridge, Harry, Graham, Cal.
Fennikoh, John A., San Marino, Cal.
Garthe, John, Santa Ana, Cal.
Hunt, John J., Inglewood, Cal.
Ingraham, Floyd L., Redondo Beach, Cal .
Keyes, Vernon T., Puente, Cal.
Lingua, Henry C., San Jose, Cal.
Mahner, Michael G., Honolulu, Hawaii
Miller, Max E., South Gate, Cal.
Olchvary, Fred, Burbank, Cal.
Pence, John R. Healdton, Okla.
Peterson, Ernest T. Altadena, Cal.
Pifer, Phil. C. Bakersfield, Cal.
Reeves, Earl B. Fontana, Calif.
Richardson, John N, Beaumont, Texas
Robinson, Geo. R., Yuma, Ariz.
Spillane, Frank J., Denver, Col.
Stronach, Frank W. Santa Barbara, Cal.
Stevenson, Allen D., Torrance, Cal.
Thomas, Frank J., Glendale, Cal.
Twaddle, Geo. M., Reno, Nevada
Wasson, Norval E., Huntington Park, Cal.
Yockers, Joe R., Alhambra, Cal.

F. B. TANNER.

Maritime Fire Chiefs Hold Convention

Round table discussions featured the annual convention of the Maritime Fire Chiefs Association held in Lunenburg, Nova Scotia, June 24-5. Many interesting papers were presented, and Walter A. Gow of Bridgewater, Nova Scotia, presided at the sessions.

Previously the association handled the volunteer firemen's tournament for the district, but after some discussion, it was decided to give up this part of the work and the by-laws were amended accordingly.

Both St. Stephen, New Brunswick and Charlottetown, Prince Edward Island, presented bids for next year's convention. The members voted to meet at St. Stephen, June 17 and 18, 1931.

Officers elected for the ensuing year are:

President, Alex Clarke, Halifax Shipyards, Halifax, N. S.
First Vice-President, A. E. O'Donnell, Campbellton, N. B.
Second Vice-President, L. MacCallum, New Glasgow, N. S.
Third Vice-President, R. B. Rattray, Charlottetown, P. E. I.
Secretary-Treasurer, K. J. McRae, Saint John, N. B.
Auditors, H. M. Mersereau, Sydney, N. S.; A. E. O'Donnell, Campbellton, N. B.; and Geo. Ackman, Moncton, N. B.

Among the Representatives present were:

R. B. Rattray, Charlottetown, P. E. I.; A. E. O'Donnell, Campbellton, N. B.; R. W. Smith, Fredericton, N. B.; W. O'Blenes, Moncton, N. B.; K. J. McRae, W. S. Vaughan, T. A. Armour, Saint John, N. B.; G. P. Ryder, St. Stephen, N. B.; F. B. Tanner, Toronto, Ont.; E. P. Meageher, Halifax, N. S.; Fire Marshal H. H. McLellan, Saint John, N. B.; B. W. Andres, R. A. Lusby, Amherst, N. S.; W. A. Gow, Bridgewater, N. S.; Thos. McDonald, Glace Bay, N. S.; J. W. Churchill, Alex Clarke, J. P. Hire, H. C. Low, Halifax, N. S.; W. E. Oliver, H. Morash, Lunenburg, N. S.; E. A. Ernst, Mahone Bay, N. S.; L. McCallum, New Glasgow, N. S.; L. E. Weatherbee, New Waterford, N. S.; A. M. Potter, Springhill, N. S.; Robt Stewart, Stellarton, N. S.; H. M. Mersereau, Sydney, N. S.; E. A. McDonald, Sydney Mines, N. S.; F. L. Layton, W. J. Christie, T. G. Taylor, Truro, N. S.; Fire Marshal J. A. Rudland, Halifax, N. S.

Riverhead, L. I., to Erect Fire Headquarters—A contract has been placed for the construction of a fire department headquarters in Riverhead, L. I., N. Y., to cost $40,000.

Members of the I. A. F. C. Graduating Class, Los Angeles Fire Department

FOUR KILLED BY EXPLOSION IN N. J. FIREWORKS PLANT

Panic Among Asbury Park Surf Bathers—Two Volunteer Firemen and Chief Slocum Injured—Fire Blown in All Directions by Blast

By WM. JEROME DALY

THE worst casualty reported as a result of fireworks during the recent Independence Day holiday occurred, not to the consumer, but to the manufacturer of fireworks, when the plant of Frank Cimino, in Neptune Township, on the outskirts of Asbury Park, a New Jersey summer resort on the Atlantic coast, blew up on Saturday afternoon,

Remains of One of the Four Buildings Constituting Factory

July 5, killing four persons, demolishing four buildings, scattering fire among trees and brush in the surrounding countryside and causing panic among thousands of surf bathers at Asbury Park.

A spectator in a fishing yawl ten miles off shore from Long Branch, the next nearest community of sizeable proportions, heard a terrific detonation. Peering against a strong sunlight in the west, huge clouds of dense smoke were discernable hovering over Asbury Park. Motorists from miles around blocked all possible avenues of travel in their eagerness to drive to view the disaster.

Fire Chief Eugene Slocum, of Neptune Township, was the first on the scene with two engine companies, one a 750-gallon pump and the other 1,000 gallons. The fire, as a fire, was not difficult to handle as the two-story frame and stucco structures were but burning wreckages when firemen arrived. The hazard was in the problem of whether or not any more explosives remained to be ignited by the burning debris. The search for bodies was started without delay, while other firemen turned their attention to surrounding homes and bungalows that had been set afire from the shower of blazing fragments from the demolished buildings.

The roofs of two of the buildings sailed through the air and landed in two different directions. The nearest fire hydrant was 1,500 feet away—supplied by a ten-inch main with forty pounds gravity pressure. To cool the ruins was a much easier task than conveying the burned and injured to nearby hospitals. Two volunteer firemen were injured by detonating fireworks that did not explode until the heat from burning debris had reached them sometime afterward. The 70-year-old father of the fireworks manufacturer, the latter's nine-year-old daughter and two relatives of the Ciminos. ages 12 years and two months, respectively, were killed. Five other persons were reported injured and one, a daughter of the owner, was missing.

Chief Slocum said the factory was licensed, that it did a thriving business in fireworks, principally selling to the summer resorts along the New Jersey coast that go in for professional pyrotechnic displays. Two buildings used for manufacture, another for storage and the fourth, the dwelling of the Cimino family, were laid waste. Officials spent most of Sunday, July 6, endeavoring to establish the cause of the sudden explosion. The entire Cimino household or what remained of it was too hysterical to even try to obtain a coherent version of what, if anything, had preceded the blast. The proprietor was in swimming in the surf at Asbury Park when the crash came. The scene of the disaster was visited by thousands of motorists on Sunday. The risk was not insured, Chief Slocum said. Chief Slocum was hobbling among the ruins on a crutch having turned on his ankle and sprained his foot in the urge to stretch lines and get water on the flaming wreckage of the factory that had operated successfully for eighteen years without a previous fire.

Charlotte Has Big Store Blaze

Ten firemen were overcome by smoke or suffered injuries sufficient to send them to hospitals in fighting a difficult blaze in Charlotte, N. C., July 13th (Sunday) which damaged Belk Bros. department store $300,000.

Several towns within a radius of forty miles offered to send firemen and trucks to aid in the five-hour battle, but Chief Hendrix Palmer considered he could handle the situation with 110 firemen and all the fire-fighting apparatus of Charlotte employed.

This fire, the most disastrous Charlotte has had in a number of years, and the fourth the Belk Bros. Company has suffered at the headquarters store, originated early Sunday in the basement of the five-story store from some unknown cause. Merchandise stored in the basement as well as hundreds of thousands of dollars worth on the five upper floors, was destroyed or badly damaged by smoke and water.

The building, of brick and concrete and practically fireproof, penned in the smoke for hours probably before the fire was discovered. It was first noticed by a motorist who had parked his car on the opposite side of East Trade Street. He rushed to a firebox and turned in the alarm.

The first thing Chief Hendrix Palmer ordered was that the windows be opened on all sides to let the smoke escape.

The more seriously injured of the firemen was precipitated into the basement when the material on which he was standing gave way. He remained in the inferno three minutes before his comrades were able to assist him in climbing out by way of a line of firehose.

Fearing attack of pneumonia, hospital officers ordered the firemen overcome by smoke to remain another day at the hospital, though apparently they were in good shape.

D. G. SPENCER.

Blast Wrecks Perth Amboy Homes

Bursts of flames, preceded by an explosion, resulted in the death of two persons, injuries to passerby, and the destruction of two three-story frame buildings in Perth Amboy, N. J., at 10:30 p.m. Police investigating the accident were not satisfied

Ruins of the Two Three-Story Buildings

that it was an accident, and while at first there was a theory that the blast was caused by a still explosion, yet the tell-tale odors and evidence were absent.

Fire apparatus had great difficulty in getting close to the damaged buildings because of the debris. It was said that the force of the explosion hurled a steel girder nearly eighty feet away, and bits of steel were imbedded in nearby buildings. Flames spread rapidly and for a time threatened the entire

This Time It Was Not a Cow But a Horse

Parts of the business and residential sections of Ripon, Wis., were destroyed as the result of a runaway horse, and for a time it was feared that most of the town would be lost in the flames. A runaway horse broke an oil pipe line in his mad dash and sparks from the horse's shoes set fire to the escaping oil. Six men were burned, one probably fatally, while fighting the flames that caused $200,000 damage. Locally, the horse now rates second to Mrs. O'Leary's famous cow of Chicago.

block. At first the firemen were forced to work in semi-darkness. Searchlights were soon brought into position. All apparatus of the city responded to the alarm and by midnight the fire was under control.

The first floor of the damaged buildings were occupied by stores, and apartments occupied the upper floors. The occupants of many of these apartments were out at the time, otherwise the casualty list may have been greater.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Week Ending July 11	Loss in Thousands of Dollars
MORRISTOWN, TENN.—Hamblen County Motor Co. garage	40
S. CAMDEN, N. J.—Stanton Forge Works, damaged	25
HOMER, OHIO.—General store of H. H. Shumaker	25
TEXARKANA, ARK.—Stock of I. Schwartz Dept. store	80
INDIO, CALIF.—Business block destroyed	80
SPRINGFIELD, MASS.—Car barns of Springfield Railway Co.	35
BOSTON, MASS.—Pacific Coast Lumber Co., adj. property	800
LOUISVILLE, KY.—Lumber Yard of H. H. Breckmann Co.	70
EVENSVILLE, TENN.—Evensville Grammar School destroyed	40
CORSICANA, TEX.—Beaton building destroyed	40
BARRY, FLA.—Farm property of Frank Zuk destroyed	25
COUNCIL BLUFFS, NEB.—Plant of Council Bluffs Gas Co.	25
TRIVOLI, ILL.—Several business buildings	30
RICHLAND, MO.—Davis grocery, adj. property	60
PUEBLO, COLO.—Highway shops of Pueblo County	40
TOLEDO, OHIO.—Sheds of W. O. Holst Builders Supply Co.	40
TELLICO PLAINS, TENN.—Ware restaurant, adj. property	25
TCHULA, MISS.—Property of Tchula Motor Co.	30
GROTON, MASS.—Property formerly owned by Wm. A. Bancroft	65
HOLMES, IOAW.—Holmes Bank, other business buildings	25
BURLINGTON, N. C.—F. J. Strader Wholesale Co.	25
COTTON VALLEY, LA.—Three blocks of business property	200
DORRIS, CAL.—Mill of Kesterton Lumber Co.	300
FLINT, MICH.—Thrift Shop, adj. property	25
CLIFTON, N. J.—Yards of Warshaw Lumber Co.	35
WELLSTON, MO.—Store and residential property, Morton Ave.	25
PAMPA, TEX.—Pampa Buick Co. damaged	25
NAZARETH, PA.—Farm property of J. H. Fulmer	40
SECAUCUS, N. J.—Property of four pig farms, Wiegand's Lane	90
FORT FRANCIS, ONT.—Department store, adj. property	40
JEFFERSON, TEX.—Lumber mill of Ware & Driskell, 8 mi. w.	25
ATLANTA, GA.—Bldg. of Atlanta, Birmingham & Coast R. R.	80
JEFFERSONVILLE, IND.—Bensinger Furniture Co. store	30
ARKANSAS CITY, KAN.—Hanger at Lawson airport	25
SAXMAN, KAN.—Flour mill destroyed	160
MINNEAPOLIS, MINN.—Dryer's Recreation Parlors	25
Week Ending July 18	
CONNERSVILLE, IND.—Plant of Lincoln Mfg. Co.	160
M'ALESTER, OKLA.—Grand Leader Department store	30
NEWPORT, ARK.—Commercial Veneer Co. plant	30
CLEARWATER, MAN.—Grain elevator destroyed	40
READING, PA.—Eureka Laundry destroyed	65
ATLANTA, GA.—Property of Armour Fertilizer Works	80
LOUISVILLE, KY.—Sheds of Anderson Mfg. Co.	125
MAPLEWOOD, MO.—The Laundry, Inc., Manchester Ave.	125
OBERLIN, KAN.—Oberlin Rolling Mills	40
LOUISVILLE, KY.—Stiglitz Furnace Co. building	45
LAKE TAHOE, CAL.—Motor boat of H. Fleischhacker, Jr.	25
HAYTI, MO.—Kohn building damaged	25
IOWA CITY, IA.—Reich's cafe, University of Iowa	40
EL DORADO, ARK.—Plant of Home Lumber Co.	25
READING, PA.—Mill property of Reading R. R.	200
WHITE STATION, TENN.—Business and residential property	80
COLMA, CAL.—American Box Company factory	80
ROCKY MOUNT, VA.—Building occupied by Turner Motor Co.	25
CALGARY, ALTA.—Roberts building damaged	65
PHILADELPHIA, PA.—Strawbridge & Clothier store	800
PLAQUEMINE, LA.—Business property of Mrs. C. N. Roth	40
COLUMBUS, S. C.—Building of Rubin Wholesale Co.	45
CORBIN, KY.—Hutton and Boggs buildings damaged	40
SPOTSYLVANIA COURTHOUSE, VA.—G. W. Perry store	45
MEMPHIS, TENN.—Plant of Southern Boiler & Tank Co.	65
PARIS, KY.—Dairy and feed barn of F. A. Wallis	25
LONDON, ONT.—Factory of E. S. Leonard & Son	200
BOISSEVAIN, MAN.—Manitoba pool elevator destroyed	60
BEARDEN, ARK.—Entire business block destroyed	35
PITTSBURGH, PA.—Plant of Hahn Cleaning & Dyeing Co.	25
CONNERSVILLE, O.—Lincoln Mfg. Co., adj. property	150
GERMNATOWN, KY.—Business and residential property	65

Rossville, S. I., Given Apparatus—The volunteer firemen of Rossville, Staten Island, were presented with a combination hose and chemical engine by the New York Fire Department.

Ladd Chief of Rutherford, N. J.—William Ladd for several years member of the Rutherford, N. J., Fire Department, was elected head of the department.

Sayville, N. Y., Orders Apparatus—West Sayville, N. Y., has placed an order with the Woodhouse Manufacturing Company for apparatus equipped with a booster tank.

Lena, Ill., Working for Fire Apparatus—Funds are being raised to purchase Boyer fire apparatus for the protection of rural property about Lena, Ill. Under present arrangements, the contemplated apparatus will be housed in Lena, and will consist of one 40-gallon chemical tank and one 60-gallon booster tank.

Against Conveying Men in Fire Apparatus—At a meeting of the Berks County Firemen's Association held in Temple, Pa., the members voiced objection to the practice of police authorities and wardens using fire apparatus to transport conscripted forest fire-fighters. Action was brought about by a report from the eastern Berks district that on a Sunday morning the siren sounded and the apparatus and some men responded. The company were told that the apparatus and men were needed to fight a forest fire, and the apparatus and men were ordered to a nearby hill for duty.

Three Men Killed in Budapest Fire

Three men were killed and several others severely burnd when trapped on the roof of a large corner block of buildings in Budapest. The men were working on an advertising sign when it suddenly became ignited.

Members and Guests Attending the Third Annual Convention of Southeastern Division of I. A. F. C. at Charlotte, N. C.

SOUTHEASTERN I.A.F.C. DIVISION MEMBERSHIP INCREASES

Holds Biggest Convention at Charlotte, N. C.—Four Sessions Are Well Attended —Athens, Ga., Next Year—Those Present

WITH 250 Chiefs, associate members and guests attending the third annual convention of the Southeastern Division, International Association of Fire Chiefs, at Charlotte, N. C., on June 24 and 25, a short account of which was published in the last issue of FIRE ENGINEERING, the division shows an increase in membership in the year equivalent to 33⅓ per cent. The meeting just held was the most successful yet, there being the largest attendance present of any of its conventions. The body now has on its rolls 158 members as against 113 who were in good standing at the close of the 1929 convention.

Chief W. H. Palmer, Charlotte, Host to Convention

Among those present at Charlotte was Leopold Diaz de Villigas, Chief of the Fire Department of Havana, Cuba.

It was decided to hold the 1931 convention at Athens, Ga., the choice being between that city and Asheville, N. C.

An enjoyable feature of the convention was the music of the Greensboro, N. C., Fire Department Band, which not only played at the sessions, but also gave several concerts in the lobby of the Hotel Charlotte.

There were no exhibits at this convention. The expenses incident to the gathering and the entertainment of the guests were taken care of by the citizens of Charlotte, according to Chief W. H. Palmer, without personal solicitation, the people responding to a letter from the Chief so generously that all bills have been paid from ample funds received. The members of the Charlotte Fire Department lent their cars for the use of the visitors, and those off duty drove them, so that all of the Chiefs and their guests were not lacking for transportation and sightseeing facilities during the two-day convention.

(*For list of those present at convention see page 622*)

Chief Noll Urges Training Schools

More fire schools and more instructors to better equip firemen for their work are urged by Chief Chris W. Noll of the Poughkeepsie, N. Y., Fire Department. A school is being conducted in the Eighth Ward of the city for the benefit of local firemen and members of adjoining departments.

In urging more schools, Chief Noll said:

"We have advanced a step in the training of police. The State of New York has created a school for the training of policemen but it has ignored the great loss of life and money caused by fires. I believe that it is time the state stepped in and did something to train the firemen not only in fire prevention but so that they themselves will be protected when they go into a fire.

"Many firemen lost their lives through the fact that they are over-enthusiastic and not properly trained in the putting out of fires. I think the state could well afford to create some place where a fireman could be properly trained.

"This matter was taken up at the Mayors' Conference which in turn took it up with the State Fire Chiefs' Association and the different zone schools were instituted of which Poughkeepsie school is one. It takes in all the cities, towns and villages within a radius of 25 miles. This is the second year we are operating our school and it has been very successful, although I must say there are still a lot of firemen in both the city and surrounding community that should take advantage of the school. I hope the day is not far off when no person can be appointed to active fire duty unless he has a diploma from the training school, as it would insure much better service and efficiency for both the city and fire department.

"Our school is operated so both the paid and volunteer firemen can attend. The classes for paid firemen are from 1 p.m. to 4 p.m. and for volunteers from 6.30 p.m. to 9 p.m. every evening for 16 weeks with the exception of Saturday and Sunday evenings."

Fire Surgeons to Meet in New York

The ninth annual convention of the National Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions will be held in New York City September 23, 24 and 25, according to an announcement by Dr. Harry M. Archer, president and Dr. Arthur Wildman, secretary. Dr. Archer is Honorary Medical Officer of the New York Municipal Civil Service Commission.

The announcement states in part:

"We can assure you of an interesting scientific programme. You will also have an opportunity to inspect some modern hospitals and meet some leading surgeons.

"This Association is trying to standardize physical and medical examinations and also endeavoring to standardize medical and surgical treatment for sick and injured policemen and firemen.

"All of our meetings have been interesting and instructive and have afforded us an opportunity to learn many things that have made us more efficient in our special work.

"The success of this organization from its inception encourages the thought of a wider field of usefulness through an increased membership, giving it greater power and influence among civic institutions. Extend to your neighbor an invitation to join the association.

"We welcome suggestions that will make the coming meeting a memorable one and request that any suggestion be forwarded immediately to the secretary."

The officers are: Dr. Harry M. Archer, President, New York; Dr. Carl H. Schulte, Vice-President, Detroit, Mich.; Dr. John J. White, Treasurer, New York; Dr. Arthur Wildman, Secretary, New York.

The Board of Governors: Dr. John P. O'Connell, chairman, Chicago, Ill.; Dr. Hubley R. Owen, Philadelphia, Pa.; Dr. Wallace Dodge, Los Angeles, Cal.; Dr. Glenn W. Stockwell, Detroit, Mich.

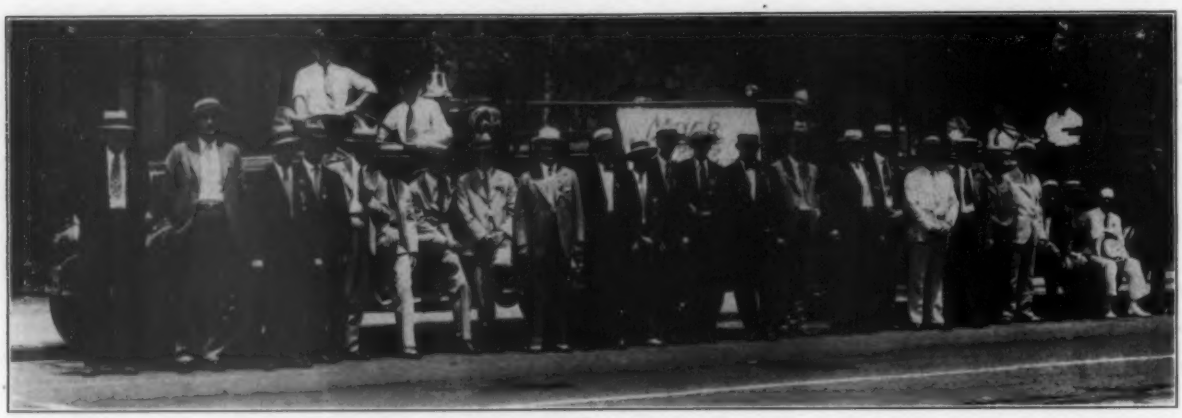
The hotel in which the convention hall will be located has as yet not been announced but Dr. Archer has an option on two or three centrally located.

WM. JEROME DALY.

Nashua, N. H., Prohibits Wooden Shingles—Following the recent conflagration in Nashua, N. H., the city passed an ordinance prohibiting wooden shingle roofs throughout the city limits, and zoning regulations have been adopted.

N. F. P. A. Is Incorporated—The National Fire Protection Association of Boston has been incorporated. Ralph Sweetland was unanimously chosen as the first chairman of the board of directors. The 1931 convention of the association will be held in Toronto, Canada, the week of May 11.

Roscoe L. Smith Now Advisory Engineer—Roscoe L. Smith, from 1912 to 1916 engineer with the St. Paul Water Department and later with the National Board of Fire Underwriters and the Louisville Fire Prevention Bureau, is now serving self-insurers as advisory engineer for fire prevention, fire protection and water supply problems. His headquarters is Ambler, Pa.



A Group of Officers and Delegates to the Southeastern Division of the International Association of Fire Chiefs at Charlotte, N. C., June 24 and 25.

Those Present at Annual Convention of Southeastern Division, I. A. F. C., at Charlotte, N. C.

*W. W. Fuller, Vicksburg, Miss.
W. D. Cates, asso., Atlanta, Ga., Southeastern Underwriters Asso.
*J. H. Harrison, Brunswick, Ga.
R. H. Rayford, asso., Mobile, Ala.
*J. L. Akins, Birmingham, Ala.
L. B. Hill, asso., Bessemer, Ala.
*W. A. Brown, Salisbury, N. C.
Thos. W. Haney, ex-chief, honorary, Jacksonville, Fla.
J. H. Foysoux, ass't chief, Salisbury, N. C.
John Weeks, asso., Atlanta, Ga.
J. E. Limberger, ass't chief, Concord, N. C.
*H. B. Wells, Newberry, S. C.
*J. S. Bromfield, Brevard, N. C.
C. B. Payne, asso., Alanta, Ga.
*I. M. Burns, Cherryville, N. C.
*H. B. Christian, East Point, Ga.
Roy Timmerman, asso., Alanta, Ga.
*C. W. Curlers, LaGrange, Ga.
J. C. Worley, ass't chief, Hamlet, N. C.
*John L. Foister, Chapel Hill, N. C.
H. B. Cummings, asso., Atlanta, Ga.
*M. N. Cleveland, Sanford, Fla.
*J. H. Monroe, Savannah, Ga.
*G. B. Caldwell, Monroe, N. C.
*George W. Gardner, Greenville, N. C.
*R. J. Tomlinson, Thomasville, N. C.
*J. O. Shuford, Lincolnton, N. C.
*H. E. Nissen, Winston-Salem, N. C.
J. H. Wentz, ass't chief, Charlotte, N. C.
C. M. Griswod, ass't chief, Charlotte, N. C.
*J. B. Darden, Clinton, N. C.
Maurice Fleischman, ass't chief, Fayetteville, N. C.
*B. M. Wood, Fayetteville, N. C.
*George E. Summerkin, Mt. Olive, N. C.
Leon J. Simmons, ass't chief, Mt. Olive, N. C.
W. P. Monroe, ass't chief, Wilmington, N. C.
*J. Robert Wood, Oxford, N. C.
*Henry Holden, Bessemer City, N. C.
*G. D. Moore, Burlington, N. C.
*J. D. McKernan, Sanford, N. C.
*D. E. Turner, Mooresville, N. C.
*W. L. Dalton, Old Fort, N. C.
*Frank D. Shaw, Greensboro, N. C.
*M. F. Paterson, Mt. Airy, N. C.

* Chief, Fire Department.

*R. B. Lewis, Raeford, N. C.
*J. Ellis, Pinehurst, N. C.
C. B. Fields, ass't chief, Pinehurst, N. C.
*John L. Miller, Concord, N. C.
*H. Smith, Farmville, N. C.
R. A. Joyner, ass't chief, Farmville, N. C.
*A. L. Duckett, Asheville, N. C.
S. W. Beck, Ocala, Fla.
Thos. O. Stewart, asso., Charlotte, N. C.
*George O. Adicks, Lake City, Fla.
*W. W. Sosber, Decatur, Ala.
*H. L. Taylor, Rome, Ga.
*C. W. King, Ft. Lauderdale, Fla.
*H. J. Williamson, Macon, Ga.
*R. M. Milan, Huntsville, Ala.
*J. W. Swan, Culpepper, Va.
*E. C. Neaty, Tuscaloosa, Ala.
*R. E. Mims, Ft. Pierce, Fla.
P. O. Heber, honorary, Atlanta, Ga.
*D. W. Brosnan, Albany, Ga.
*D. C. Rainwater, Anniston, Ala.
*H. R. MacMillan, Jacksonville, Fla.
*K. C. Billings, Lancaster, S. C.
*H. Rose Bridges, Athens, Tenn.
Jim Owenbey, ass't chief, Etowah, Tenn.
*G. B. Farris, Etowah, Tenn.
*John Terrell, Atlanta, Ga.
*A. H. Applewhite, Suffolk, Va.
*E. W. Reese, Orange, Va.
*G. I. Johnson, Hampton, Va.
*W. H. Joynes, Richmond, Va.
Frank McCrimmon, asso., Ft. Lauderdale, Fla.
*C. L. Ingram, Montgomery, Ala.
*C. H. Thrasher, Tuskeegee, Ala.
C. L. Averett, ass't chief, Tuskeegee, Ala.
J. G. Iler, asso., Charlotte, N. C.
*V. W. Craford, Cornelia, Ga.
W. H. Blair, mayor, Wilmington, N. C.
*W. W. Stephen, Southern Manganese Plant, Anniston, Ala.
J. R. Carnes, asso., Knoxville, Tenn.
*W. G. Sledge, Greensboro, Ala.
*H. B. Rich, Bainbridge, Ga.
Sherwood Brockwell, N. C. State Fire Marshal, Raleigh, N. C.
*F. C. Ofaender, Winter Haven, Fla.
*E. F. Beville, Gainesville, Fla.
*F. E. Donnald, Greenville, S. C.
*T. L. Mewborn, College Park, Ga.
*G. B. Hunt, Moultrie, Ga.
*L. F. Cothran, Spartanburg, S. C.
J. Thomas Medlin, asso., Atlanta, Ga.
*Leopolde Diaz de Villegras, Havana, Cuba

C. M. Johnson, Knoxville, Tenn.
*Glenn Huffstetler, Maryville, Tenn.
*J. C. Taylor, Kanapolis, N. C.
*George F. McLoughlin, Gastonia, N. C.
*A. B. Horney, High Point, N. C.
*Chas. Schnibben, Wilmington, N. C.
*R. K. Hall, Edenton, N. C.
*W. H. Palmer, Charlotte, N. C.
*A. C. Altwater, Sebring, Fla.
J. O. Eaves, asso., Atlanta, Ga.
*W. E. Holland, Raleigh, N. C.
*Ben L. Mills, Cartersville, Ga.
J. W. Grant, asso., Portsmouth, Va.
C. D. Flannigan, asso., Athens, Ga.
J. H. Epting, asso., Athens, Ga.
*E. F. Lester, Athens, Ga.
C. D. Terrell, asso., Athens, Ga.
*S. T. Green, Gadsden, Ala.
A. W. Jawdy, asso., New Bern, N. C.
*E. W. Kidd, Newnan, Ga.
*R. S. Braughan, Norfolk, Va.
*F. C. Jesser, Covington, Va.
*J. B. Gordon, Newport News, Va.
*R. A. Foster, Portsmouth, Va.
*R. A. Alexander, Portsmouth, Va.
*J. J. Cuddihy, Hopewell, Va.
*J. M. Duncan, Alexandria, Va.
*W. T. Miller, Petersburg, Va.
Thos. C. Hull, asso., Atlanta, Ga.
Y. M. Cleveland, asso., Orlando, Fla.
A. K. Cleveland, asso., Orlando, Fla.
*Dr. C. I. Millen, Albemarle, N. C.
C. H. Bartlett, asso., Asheville, N. C.
W. K. Mingis, ass't chief, Belmont, N. C.
Murray D. Smith, asso., New York City.
*C. L. Gilbert, Statesville, N. C.
Louis A. Lehr, asso., Birmingham, Ala.
John G. King, asso., Atlanta, Ga.
Jas. C. Iseley, asso., Burlington, N. C.
George R. Ponce, asso., Key West, Fla.
Joseph H. Green, asso., New York City.
*Thos. A. Gilmore, Huntington, W. Va.
A. G. Sullivan, asso., New York City.
Robert G. Browning, asso., New York City.
J. C. Rowald, asso., Charlotte, N. C.
C. H. E. Korgle, Shelby, N. C.
*J. B. Kennedy, Augusta, Ga.
J. H. Wood, asso., Asheville, N. C.
*F. W. Burnett, Durham, N. C.
*F. F. McConnell, Anderson, S. C.
E. A. Johnson, ass't chief, Kanapolis, N. C.
S. S. McCoy, ass't chief, Kanapolis, N. C.
Louis S. Arnett, ass't chief, Abingdon, Va.
*T. C. Patterson, Mt. Holly, N. C.

New York City Has Bootleg Problem

Independence Day celebrations with fireworks in the metropolitan area of New York resulted in injury to more than 300 persons, with no casualties, despite the prohibition against fireworks in the city proper, as well as in the Westchester county border-line communities. Fire Commissioner John J. Dorman and Health Commissioner Dr. Shirley Wynne, campaigned for a week or two prior to the Fourth of July holiday in an effort to reduce as much as possible the use of fireworks. Nevertheless, there was considerable bootlegging in contraband firecrackers. The newspapers of the metropolis gave invaluable aid to the municipal authorities by advance public notices. All avenues and channels leading into the city from neighboring states were watched by Fire Prevention Inspectors as well as by the police, but there was an appreciable amount of noisemaking.

In a radio address sent from the studio of the City's broadcasting station two nights before the Fourth of July, Commissioner Dorman warned of the dangers of fireworks celebrations.

WM. JEROME DALY.

Apparatus Crashed Into Street Car—As appartaus of Dunmore, Pa., was going out of the Neptune Station in answer to an alarm, it collided head on with a street car. No one was injured.

Five Firemen Hurt in Apparatus Crash—Five firemen were injured, two seriously, when a water tower and a pumper of the New York Fire Department sideswiped each other on the way to a small fire. Part of one man's foot was later amputated.

FIRE PREVENTION ORDINANCE FOR CITIES AND TOWNS

It Establishes Bureau of Fire Prevention—Prescribes Regulations for Hazardous Materials and Processes

THE following Fire Prevention Ordinance has been prepared by the Engineers of the National Board of Fire Underwriters and is recommended by the organization for adoption by cities and towns. While it is not expected that in all cases smaller cities will find need for an ordinance of such length, it is recommended by the Board that a complete set of regulations be adopted in all cases, for even though there may be no immediate need of regulation of a particular hazard, every growing community is sure to have these hazards introduced sooner or later, and it is better to be prepared for them than to develop unrestricted and then try to regulate them. The ordinance will be published in its entirety serially in FIRE ENGINEERING:

Fire Prevention Ordinance

Be it ordained by the City Council (or Board of Commissioners) of the City (Town) of.....

Provisions for the establishment of a Bureau of Fire Prevention, providing officers therefor, and defining their powers and duties.

1. A Bureau of Fire Prevention in the Fire Department of the City of.....is hereby established which shall be operated under the supervision of the Chief of the Fire Department.

The Chief of the Fire Department shall designate an officer (or member) of the Fire Department as Chief of the Bureau of Fire Prevention, who shall hold this office at the pleasure of the Chief of the Fire Department.

The Chief of the Fire Department may also designate such number of Inspectors as shall from time to time be authorized by the City Council (or Board of Commissioners).

2. It shall be the duty of the officers of the Bureau of Fire Prevention to enforce all laws and ordinances covering the following:

1. The prevention of fires;
2. The storage and use of explosives and inflammables;
3. The installation and maintenance of automatic and other fire alarm systems, and fire extinguishing equipment;
4. The maintenance and regulation of fire escapes;
5. The means of adequacy of exit in case of fire, from factories, schools, hotels, lodging houses, asylums, hospitals, churches, halls, theatres, amphitheatres, and all other places in which numbers of persons work, live or congregate, from time to time, for any purpose;
6. The investigation of the cause, origin, and circumstances of fires.

They shall have such other powers and perform such other duties as are set forth in other sections of this ordinance, and as may be conferred and imposed from time to time by law.

3. The Chief of the Fire Department, Chief of the Bureau of Fire Prevention or any Inspector may, at all reasonable hours, enter any building or premises within his jurisdiction for the purpose of making any inspection, or investigation which, under the provisions of this ordinance, he or they may deem necessary to be made.

4. The Chief of the Fire Department, Chief of the Bureau of Fire Prevention or an Inspector specially designated thereto shall inspect, as often as may be necessary, but not less than four times a year, all specially hazardous manufacturing processes, storage or installations of gases, chemicals, oils, explosives and flammable materials, all interior fire alarms and automatic sprinkler systems, and such other hazards or appliances as the Chief of the Fire Department shall designate, and shall make such orders as may be necessary for the enforcement of the laws and ordinances governing the same and for safeguarding of life and property from fire.

5. It shall be the duty of the Chief of the Fire Department to inspect, or cause to be inspected by the Bureau of Fire Prevention, or by the Fire Department officers and members, as often as may be necessary, but not less than twice a year in outlying districts and four times a year in the closely built portions of the city all buildings and premises except the interiors of private dwellings, for the purpose of ascertaining and causing to be corrected any conditions liable to cause fire, or any violations of the provisions or intent of any ordinance of the city affecting the fire hazard.

Whenever any Inspector, as defined above, shall find in any building or upon any premises, combustible or explosive matter or dangerous accumulations or rubbish or unnecessary accumulation of waste paper, boxes, shavings, or any highly flammable materials, and which is so situated as to endanger property; or shall find obstructions to or on fire escapes, stairs, passageways, doors or windows, liable to interfere with the operations of the Fire Department or egress of occupants in case of fire, he shall order the same to be removed or remedied.

6. The Chief of the Fire Department, Chief of the Bureau of Fire Prevention or an Inspector upon the complaint of any person or whenever he or they shall deem it necessary, shall inspect all buildings and premises within their jurisdiction. Whenever any of said officers shall find any building or other structure which, for want of repairs, lack of sufficient fire escapes, automatic or other fire alarm apparatus or fire extinguishing equipment or by reason of age or dilapidated condition, or from any other cause, is especially liable to fire, and which is so situated as to endanger other property or the occupants thereof, and whenever such officer shall find in any building combustible or explosive matter or flammable conditions dangerous to the safety of such building or the occupants thereof he or they shall order such dangerous conditions or materials to be removed or remedied.

7. The service of such orders as mentioned in Sections 4, 5, and 6 may be made upon the occupant of the premises to whom it is directed, either by delivering a copy of same to such occupant personally or by delivering the same to and leaving it with any person in charge of the premises, or in case no such person is found upon the premises, by affixing a copy thereof in a conspicuous place on the door to the entrance of the said premises. Whenever it may necessary to serve such an order upon the owner of premises such order may be served either by delivering to and leaving with the said person a copy of the said order, or, if such owner is absent from the jurisdiction of the officer making the order, by mailing such copy to the owner's last known post office address.

Any such order shall forthwith be complied with by the owner or occupant of such premises or building. If such order is made by the Chief of the Bureau of Fire Prevention or one of the Inspectors, such owner or occupant may within twenty-four hours appeal to the Chief of the Fire Department, who shall, within five days, review such order and file his decision thereon, and unless by his authority the order is revoked or modified it shall remain in full force and be complied with within the time fixed in said order or decision of the Chief of the Fire Department.

Provided, however, that any such owner or occupant may, within five days after the making or affirming of any such order by the Chief of the Fire Department, file his petition with the Municipal Court, praying a review of such order and it shall be the duty of such court to hear the same within not less than five days nor more than ten days from the time the petition is filed, and to make such order in the premises as right and justice may require and such decision **shall be final.** Such parties so appealing to the Municipal

Five Firemen Injured Fighting Lumber Yard Fire

A fire that started in a lumber yard in San Francisco, set fire to dried weeds and grass and approached within a few feet of the Grace Company oil tanks across the street. The fire is believed to be of incendiary origin. Five firemen were injured, none seriously. Property damage amounted to $75,000.

Court shall file with said court within two days a bond in an amount to be fixed by the court, to be approved by the court, conditioned to pay all the costs of such appeal in case such appellant fails to sustain his appeal or the same be dismissed for any cause.

8. The Bureau of Fire Prevention shall investigate the cause, origin and circumstances of every fire occurring in the city by which property has been destroyed or damaged and, so far as possible shall determine whether the fire is the result of carelessness or design. Such investigations shall be begun immediately upon the occurrence of such a fire by the Inspector in whose district the fire occurs, and if it appears to the officer making such an investigation, that such fire is of suspicious origin, the Chief of the Fire Department shall be immediately notified of the facts; he shall take charge immediately of the physical evidence, shall notify the proper authorities designated by law to pursue the investigation of such matters, and shall further co-operate with the authorities in the collection of evidence and in the prosecution of the case. Every fire shall be reported in writing to the Bureau of Fire Prevention within two days after the occurrence of the same, by the officer in whose jurisdiction such a fire has occurred. Such report shall be in such form as shall be prescribed by the Chief of the Fire Department, and shall contain a statement of all facts relating to the cause, origin and circumstances of such fire, and extent of the damage thereof, and the insurance upon such property, and such other information as may be required.

9. The City (Prosecuting) Attorney, upon request of the Bureau of Fire Prevention, shall assist the Inspectors in the investigation of any fire which, in their opinion, is of suspicious origin.

10. It shall be the duty of the Chief of the Fire Department to require teachers of public, private and parochial schools and educational institutions to have one fire drill each month and to keep all doors and exits unlocked during school hours.

11. The Chief of the Fire Department shall keep, in the office of the Bureau of Fire Prevention, a record of all fires and of all the facts concerning the same, including statistics as to the extent of such fires and the damage caused thereby, and whether such losses were covered by insurance, and if so, in what amount. Such record shall be made daily from the reports made by the Inspectors under the provision of this ordinance. All such records shall be public.

12. The annual report of the Bureau of Fire Prevention shall be made on or before the.....day of .....and transmitted to the Mayor (or Board of Commissioners), it shall contain all proceedings under this ordinance, with such statistics as the Chief of the Fire Department may wish to include therein; the Chief of the Fire Department shall also recommend any amendments to the ordinance which, in his judgment, shall be desirable.

Regulations Providing for Fire Prevention and Protection in Connection with Hazardous Materials and Processes.

Part 1. General Provisions

101. Nothing contained in this ordinance shall be construed as applying to the transportation of any article or thing shipped in conformity with the regulations prescribed by the Interstate Commerce Commission, nor as applying to the military or naval forces of the United States.

102. The word "person" wherever used in this ordinance shall be construed to include person, persons, firm or corporation.

103. The word "approved" wherever used in this ordinance shall be construed to mean conforming to the best practices and standards in general use which shall have been accepted by the Bureau of Fire Prevention.

104. A permit is the written authority of the Bureau of Fire Prevention, issued pursuant to this ordinance, to have, keep, store, use, manufacture, sell, handle and transport explosives, inflammable materials and rubbish, as hereinafter defined, and to operate or maintain establishments hereinafter specified.

105. Whenever the Bureau of Fire Prevention shall reject or refuse to grant a permit, or when it is claimed that provisions of this ordinance or any ordinances relating thereto do not apply, or when it is claimed that the true intent and meaning of this ordinance or any regulations have been misconstrued or wrongly interpreted, and the permit applied for having been refused by the Bureau of Fire Prevention, then the person may appeal from the decision of the Bureau of Fire Prevention, in writing, as outlined in Section 7.

(To be continued)

New Pontoon Device Tested in Boston

A pontoon hose carrier, designed to enable firemen to reach blazes under low wharves and bridges, was tested and approved by officials of the Boston Fire Department.

Great difficulty has been experienced in the past in reaching fires under bridges, especially at high tide. Even pup boats were useless because of the lack of headroom. Following the L Street bridge fire of June, the pontoon was developed by a member of Boat 47. During the test the pontoon was first floated from a fireboat and then from the land, and it worked well in both cases.

Firemen Warned Not to Use Speed

Chief Charles W. Greenfield, President of the New Jersey Fire Chiefs' Association and the Eastern Association of Fire Chiefs told members of the Mercer County Firemen's Association, New Jersey, that twenty-five miles an hour should be a maximum speed in going to a fire. He warned that drivers must slow up and explained:

"If you have an accident you not only endanger the lives of firemen and others and damage your apparatus, but you can't put out the fire. Choose the slower but safer method of going to fires and accomplish what you set out to do."

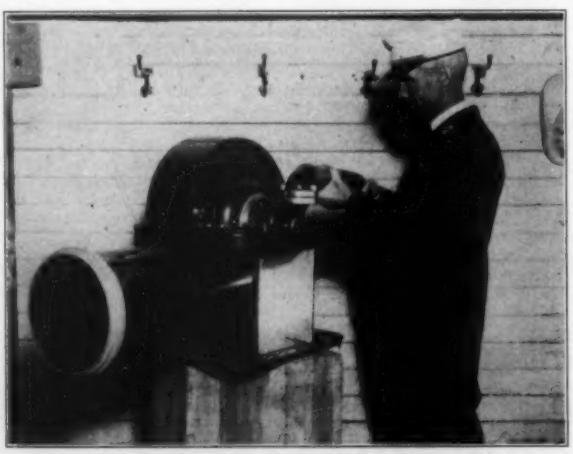
Y.M.C.A. Privileges Free to Nyack Guests

William Abbott, secretary of the Nyack Y. M. C. A., has voluntarily informed the convention committee of the New York State Firemen's Association that he will present to each delegate and officer of the association upon registration at the convention, a card entitling him to full privileges at the "Y" during the week, gratis.

Work Started on Logansport, Ind., Station—Construction has started on a fire station for Logansport, Ind.

El Paso, Tex., Awards Fire Alarm Contract—El Paso, Tex., has placed an order for a Gamewell fire alarm system extension to the present system to cost $26,000. Outside construction work will cost $23,619, including several miles of underground cable. The extension of the system is to be completed about December 1 and will be installed under the supervision of Charles F. Maulen of the Dallas office of the Gamewell Company.

Recent Deliveries Made of Mack Apparatus—Deliveries of Mack fire apparatus recently made include one 700-gallon pumper to Floral Park Centre, Long Island, one 1,000-gallon centrifugal pumper to Kennebunkport, Me., one 750-gallon centrifugal pumper to Pendleton, Ore., one 1,000-gallon rotary pumper and a city service ladder truck to Goldsboro, N. C., one 600-gallon pumper to Revere, Mass., one 1,000-gallon centrifugal pumper to Montclair, N. J., and a combination car to Portland, Ore.



New Type Apparatus for Ejecting Smoke

A new type of equipment has been designed for ejecting smoke from a burning building at the rate of 10,000 cubic feet a minute. Deputy Chief O'Hanlin, of the New York Fire Department, is demonstrating the large hydraulic pump and fan.

Static on Belt Drives Controlled

Static electricity is a constant source of danger in certain industries. This is especially true where manufacturing operations must be carried on in the presence of fumes, gases or dust. The ordinary belt drive has given some trouble as a generator of static and previous attempts to overcome the difficulty have been entirely ineffectual or only partially successful.

The generation of static electricity on belt drives is caused by the natural creeping of the belt on the pulleys. Even though the creep, in many instances, is less than one half of one per cent, it is sufficient to generate sizeable static charges under favorable conditions.

Generally, in damp weather, the belt drive does not generate large enough charges to cause sparks to jump. This is because when the fibres of the leather belt are moist, the belt is a fairly good conductor and will lead charges off to the pulleys about as fast as they are generated.

On the other hand dry atmospheric conditions are an ideal medium for the functioning of static troubles. A well dried out belt is a good insulator and as the charge collects on the outersurface it continues to build up until it reaches the proportions of a spark and jumps to the nearest grounded object.

One among the many means adopted for eliminating static charges has been to hang wire gauze over a belt, allowing it to drag on the slack strand, and then grounding the wire gauze. This has not been satisfactory because the collectors have been too often neglected, get out of order and fail to ground belts properly.

The Bureau of Chemistry, Department of Agriculture, recently did a great deal of work on this problem. They found that by dressing a belt thoroughly with a mixture of lamp black, or carbon, and fish glue, they were able to impart a surface that would conduct the charge from the belt to the pulleys, and then by grounding the equipment they were able to lead the charge off as fast as it accumulated. While this method has a great deal of merit it is not entirely ideal because it requires frequent dressing of the belt which, in itself, is not permanent.

A static proof belt has recently been developed in which a row of copper wire stitching along each edge of the belt makes contact with the pulley faces at all times. In this way static charges are led off through the belt by means of the wire stitching. It is then only necessary to see that the machines are well grounded to avoid any further danger from static charges.

Belting made in this way is permanently static proof and entirely eliminates the hazards that arise from this source.

ROY C. MOORE,
Chief Engineer, Chas. A. Schieren Co.

New Jersey Firemen Meet in September

The fifty-third annual convention of the New Jersey State Firemen's Association is to be held, according to a decision of the Executive Committee at a recent meeting, at the Atlantic City Auditorium, Atlantic City, N. J., on Friday and Saturday, September 19 and 20. The first session of the convention is to take place at 2:30 p.m. on Friday and the second at 10:00 a.m. on Saturday. Bird W. Spencer is President, Charles E. Burr, Treasurer, and William Exall, Chamber of Commerce Building, Newark, N. J., is Secretary of the association.

New York Opens Apparatus Bids

Bids were recently opened by the Board of Purchase of New York City for seven pumpers of 750 gallons capacity each, three 65-foot ladder trucks and two rescue company trucks. Bids were submitted for the pumpers by Mack, American-LaFrance, Seagrave, Ahrens-Fox and Four-Wheel Drive. For the ladder trucks, bids were submitted by Seagrave, American-LaFrance and Mack, and for the rescue company trucks by Mack, Seagrave and American-LaFrance.

WM. JEROME DALY.

Northwest School Proceedings Issued

All papers and discussion presented at the Second Northwest Fire School have been published in book form and is on sale by Harold H. Laskey, Northwest Fire School, University of Minnesota, Minneapolis, Minn., at one dollar a copy. The book consists of ninety-six pages, and contains an instruction program in evolutions and first aid.

VALUE OF FIRST AID SQUAD DEMONSTRATED IN CENTRALIA

All Members of Unit Hold Life Saving and First Aid Certificates—Have Rendered Incalculable Assistance Since Organization

By F. BILLIE WILCOX

TWO lives saved within 48 hours just a few weeks ago, five lives saved since January 1, 1930, and 18 lives saved in the past five years since the first aid work was started, is the record of the Centralia, Wash., fire department, which numbers only eight full time members. Five men compose the two squads, Fire Chief Ted R. Patton being the third member of both squads.

Five years ago, a Woman's Club "movement" purchased a lungmotor that soon became dust covered in the city hall from lack of use and improper care. The fire department took charge of the lungmotor, started a study of first aid methods, and today, as result of regular weekly drills in every kind of first aid and life saving work, ranks among the most efficient squads in the State of Washington. The reputation earned for success in restoring life

Photo by F. Billie Wilcox

An Explanation of How the Work is Done

Chief T. R. Patton of Centralia, Wash., explaining the operation of an inhalator to two men whose lives were saved by the department within two days of each other.

to accident victims, brings in calls from lake and swimming resorts, from fishing streams, from logging camps, from farms, nearby cities, hospitals, and all parts of the city. The firemen have worked over victims of smoke, high voltage electrical shock, drowning, asphyxiation and carbon monoxide poisoning, aiding in serious operations at hospitals, saving lives of babies prematurely born, and persons victims of alcoholic poisoning.

Chief Patton says that every case is different, and only constant training and regular weekly drill has enabled them to become sufficiently expert to meet the great variety of emergency cases.

The squad members all hold U. S. Bureau of Mines life saving and first aid certificates from special training courses. The equipment gradually accumulated as their work grew consists of an H. H. Inhalator, with which they use CO_2 consisting of 95 per cent oxygen, and 5 per cent carbon dioxide that is used principally in cases of smoke, electric shock and all cases of asphyxiation; a lungmotor, used with prematurely born babies and other cases where respiration must be forced; first aid kits; lines, grappling hooks, and drags for cases of drowning. The equipment is usually

tossed in Chief Patton's roadster, which boasts a "rumble" seat for the extra man and the equipment.

A few stories of life saving work were dragged out of Chief Patton the other day. A woman seriously ill with quinzy and Bright's disease was given up as hopeless by the doctors in charge. She was in a town some twenty miles northwest of here. Though skeptical, but without any other hope available, they finally called upon the firemen for help. With their lungmotor and resuscitation methods, the tremendously difficult breathing of the patient was relieved. Seven times from her home enroute to the hospital the oxygen treatment was administered. With that beginning and subsequent treatments shortly later the woman was saved, and today is normal.

A call during a terrific rain storm took two of the crew ten miles up into the wilderness of a logging works. A logger working near a high voltage line of 1100 volts had been a victim of shock and suffered many bad electrictiy burns around his legs. He was far from the city, far away from main traveled highways, far into the heavy timber, and, more than that, up a steep hillside. Patton and his aide, now Assistant Chief W. J. Ryckman, found the man, treated his burns, bandaged them, made a stretcher of their coats, and carried him down the hill. He was treated with the inhalator. So severe was the shocks that the victim remained in the hospital six months, but finally recovered and is at work again today.

A prematurely-born babe arrived at a local hospital. The little lad's heart was on his right side, his lungs almost dried up, and death seemed certain. Doctors called in the fire department squad. Six days of artificial breathing with the lungmotor, with X-ray examinations taken every day to show progress, gradually restored life. On the fourth day the heart went over to the left side, and on the sixth day the lung filled out and started functioning properly. The boy lived and is a young lad today.

The Round Table

(*Continued from page* 614)

companies, the company number is stamped on each coupling.

Once each year every foot of fire hose in service is tested to 175 pounds hydrostatic pressure, any section showing a weakness is discarded. If suitable for "wash down" purposes, it is stamped on both couplings with the letter "R." This hose is placed on a reserve hose wagon and used whenever we have any work to do where ordinary hydrant pressure is sufficient. Any hose condemned as unfit for further service is discarded as junk, or sold, after the butts have been removed.

This department has no tower, but all of its serviceable hose not in service with companies is laid out its entire length on the second floor of our reserve house, so as to provide ventilation between each section. Once every three months water is run through each length, drained, replaced, and the couplings and gaskets examined. Hose which is in service is treated in a like manner if it has not been in use for a three-month period. There is 1,000 feet of hose in reserve at each station and it is used while service hose is drying. In fair weather, hose wet from fire duty, is hung on a hose drier out in the open, turned over periodically, and when dry, placed back in service.

Our records show the name of the manufacturer, month and year of purchase, price per foot, where placed in service, and with what company; or if held in reserve, the name of the company.

On delivery of each lot purchased, one section is selected at random, and tested to four hundred pounds hydrostatic pressure, the twist, elongation, behavior being noted and recorded also. The weight of section is noted too, and if found satisfactory the purchase is confirmed, all information secured by such test being recorded. If more than one make of hose is issued to a company at the same time, each make is laid on the apparatus alternately, and after a few years service, the best make for your needs may be determined by comparison of these sections.

At a glance our records show where every length of fire hose is located, its age and condition. At the finish of the annual hose test the records are of course rewritten. The following information is recorded: Name of manufacturer, month and year, location of hose, amount at each location, and totals giving the amount of each make on hand.

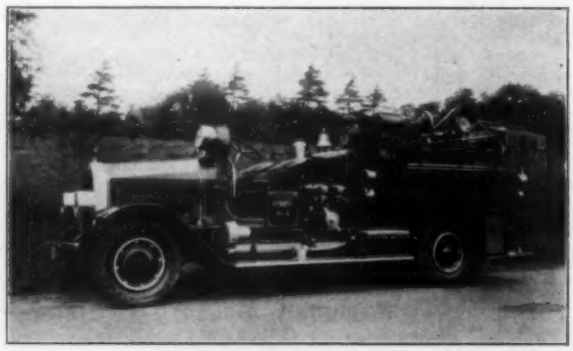
Between the annual test of hose, should any section become damaged or have their butts mashed, this is reported by company officer. Should butts be replaced, they are stamped to duplicate the ones taken off.

Emergency and Rescue Truck in Service in Blairsville

A special body was constructed on a Meteor chassis for use as an emergency and rescue truck by Blairsville, Pa. It carries four Bullard-Davis gas masks, one B-D first aid kit, one H-H inhalator, two blankets, stretcher, axe, crowbar, nozzles, four Excellight hand searchlights, one Westinghouse 1,000-watt floodlight with 500 feet of wire, siamese, 25 pair rubber glovers, 25 pair rubber boots, 10 rubber coats, rope, cellar nozzle, hose, couplings, wrenches, hose jackets, and three Shuredry salvage covers. The truck is said to be the first rescue truck in this section of Pennsylvania.

Pumper Equipped with Flood Lights

Through the generosity of Francis E. Ingals, of Chaffinch Island, Conn., Guilford now has a 750-gallon Maxim pumper of special design. Fire departments form the major hobby of Mr. Ingals, and he has contributed in a large measure to the design of the new pumper.



Special Maxim Pumper for Guilford, Conn.

One truck carries all the equipment. Space from the hose body was taken for a 2 k.w. Kohler 110-volt lighting plant which gives current for three flood lights and one arc searchlight. There are other lights about the truck. Three of the flood lights have long cables so that the lights may be placed on nearby buildings, or some distance from the apparatus. The arc light is a marine nine-inch searchlight as found on large boats.

The apparatus carries first aid equipment, a stretcher outfit and blankets, six hot pads, one H and H inhalator and extra tanks.

The lights and deck gun are mounted on a light deck over the generator space.

Between the bucket seats is a third small bucket seat for Mr. Ingal's dog Duke that goes with him to all fires.

It is possible to load nine hundred feet of 2½-inch hose and two hundred feet of one inch hose for the booster pump on the apparatus. There are three lengths of large suction and two lengths of small suction, also a number of tips for the deck gun and nozzles.

It is said that this is the largest size pumper between New Haven and New London, Conn., and being privately owned, it is on call for service in the different towns and by the state police.

Williamsport, Pa., Moves Into New House—Company No. 3 of Williamsport, Pa., has moved into its new home.

FIRE DEPARTMENT ACTIVITIES

Wapello, Ia., Buys Pumper—Wapello, Ia., has ordered a new pumper.

Bolivar, Pa., to Have Pumper—A new pumper is to be delivered August 1 to Bolivar, Pa.

Pumper Delivered to Taylor, Tex.—A 1,000-gallon pumper has been delivered to Taylor, Tex.

E. Hartford, Conn., to Buy Pumper—East Hartford, Conn., voted to purchase a 1,000-gallon pumper.

Fire House Opened in Pleasanton, Cal.—The new $10,000 fire station of Pleasanton, Cal., has been formally placed in service.

San Francisco Lets Station Contract—San Francisco has let a contract for the construction of a fire station on 18th Avenue.

Pumper Delivered to Childress, Tex.—A 650-gallon pumper has been delivered to Childress, Tex. The pumper costs $6,500.

Fire Alarm Completed in Santa Barbara—The city of Santa Barbara, Cal., has accepted the new Gamewell fire alarm system.

Fire Alarm to be Improved in Forest Hills—New York City will spend $27,000 to improve the fire alarm system in Forest Hills.

Mt. Vernon, N. Y., to Erect Fire Station—A new fire house is to be erected in the Williamsburg section of Mt. Vernon, N. Y.

Smithers, B. C., Orders Chemical Car.—Smithers, B. C. Canada, has ordered a chemical car equipped with two chemical tanks.

Pumper Delivered to Ownesville Mo.—A pumper has been delivered by the General Fire Truck Company to Owensville, Mo.

Mt. Gilead, O., Votes to Buy Apparatus—Mt. Gilead, Ohio, voted to purchase a Seagrave 500-gallon "Suburbanite" pumper for $5,500.

Canton, Ohio, May Expand Fire Alarm—Canton, Ohio, is considering the installation of a fire alarm box in each of the public schools.

South Amboy May Change Fire Alarm—Suggestions have been made that revisions be made to the fire alarm system of South Amboy, N. J.

Springfield, Mass., to Erect Fire House—A permit has been issued for the construction of a fire station in Springfield, Mass. to cost $49,000.

New Rochelle, N. Y., May Improve Fire Alarm—New Rochelle, N. Y., is obtaining estimates of the cost to improve the present fire alarm system.

W. Hempstead, N. Y., Considering Fire House—The fire commissioners of West Hempstead, N. Y., are seeking an appropriation for a new fire station.

Monroe, Ia., Raising Apparatus Funds—Funds are being raised from the farmers around Monroe, Ia., for the purchase of appartus for rural protection.

New Station Opened in Eastwick, Pa.—A new fire station was formally dedicated in Eastwick, Pa. Chief Ross B. Davis of Philadelphia spoke at the exercises.

Needham, Mass., May Erect Fire Station—Needham, Mass., is seeking an appropriation of $100,000 for the construction of a combined fire and police station.

Tacoma Fireboat Repaired—Work has been completed on the Tacoma, Wash., fireboat which met with an accident April 21. All the work was done by the city shops.

Community Apparatus for Fonda, Ia.—Subscriptions are being secured for community fire apparatus for Fonda, Ia. The membership fee is $25 for each set of farm buildings.

Belmond, Ia., Buys Pumper—Belmond, Ia., has purchased a 500-gallon Boyer pumper fitted with a 100-gallon booster tank. The apparatus is mounted on a Reo chassis.

Lloyd Busey, Chief of West Point, Ky.—Lloyd Busey, former member of the Louisville Fire Department, has been appointed head of the volunteer department in West Point, Ky.

Parma, O., Seeks More Firemen—An appeal has been made to the village council of Parma, Ohio, to have more firemen appointed. Loss of a house by fire was blamed on lack of firemen.

Portland Junior Captains Pass Examinations—All of the fifty junior captains of Portland, Ore., who took the promotional examinations for senior captain, have passed and have qualified for appointments, pending vacancies.

Aerial Ladder Delivered to Syracuse, N. Y.—A Seagrave aerial ladder has been delivered to Syracuse, N. Y. The order was placed some time ago together with one for two pumpers.

Denton Has Two New Fire Stations—Two new fire stations are being completed in Denton, Tex. Both are two stories high, constructed of brick, with living quarters on the second floor.

Des Moines Prepared for First Aid Work—Des Moines, Ia., has a car fitted for emergency service. It is equipped with an inhalator, lifeline, insulated gloves, splints, gas masks and so forth.

Bradford, Ill., Raising Funds—Bradford, Ill., is raising funds for the purchase of fire apparatus for the protection of rural property. The apparatus will be housed by the town and there will be no assessments.

Allouez, Wis., to Buy Apparatus—An agreement has been reached whereby Allouez, Wis., will buy fire apparatus that will be housed and manned by De Pere, Wis. Another driver will be needed for the new apparatus.

Department Organized in Jasper, Tex.—A volunteer fire department has been organized in Jasper, Tex., and a combination pumper and chemical apparatus purchased. A water system is now in the course of construction.

Huron, O., Apparatus Without Driver—No one wants to drive the fire apparatus in Huron, Ohio, unless some legal way can be found to protect the volunteer fire department drivers from personal liability in case of accident.

Champlain, N. Y., Discusses Fire Protection—A supper meeting of the Men's Group was held in Champlain, N. Y., at which the subjects fire fighting and fire prevention were discussed. Chief Arthur Atwood, of Champlain, was one of the speakers.

Iowa Firemen Receive School Awards—Forty-three Iowa firemen from eighteen cities have been awarded school certificates for attending the short fire course given at the Iowa State College, Ames. A complete record was kept of the attendance and work of each man enrolled.

Wisconsin Firemen Select Kilbourn—At the convention of the Wisconsin State Firemen's Association held in Plymouth, Kilbourn was selected as the next convention city. More than forty-five companies participated in the parade. With the exception of the corresponding secretary, all of the officers have been re-elected.

Monmouth County Chiefs Plan Aid System—A list has been made of all available fire apparatus in Monmouth County, N. J. All the Chiefs in the county held a meeting in Freehold, N. J., to make plans for a "cover up" system. Chief Breeder of Atlantic City was invited to speak on the code system in connection with the mutual aid plan.

Kentucky to Study Fire Hazards—State officials of Kentucky have ordered that exhaustive studies be made of the report of fire hazards in the state institutions under control of the State Board of Charities and Corrections. The inspections were made by the Kentucky Actuarial Bureau under the direction of George H. Parker, Louisville.

Cleveland, O., Wants New Film Law—Following the studio fire in Columbus, Ohio, when five firemen were overcome by bromide fumes, the safety committee of Cleveland is planning the passage of new motion picture film storage rules. For over a year Cleveland has been working under a tentative set of regulations. At the Columbus fire the blaze was brought under control after three hours' work.

Los Angeles Firemen Working for Pension—Members of the Los Angeles Fire Department are working for an amendment to apportion a part of the corporation tax toward a pension fund for firemen. The amendment provides a fund to be set aside every two years not exceeding fifty per cent of the corporation tax. The state measure will be of material benefit to 245 departments in California.

PROPOSED IMPROVEMENTS

Winton, Penn.—Winton Hose Co. No. 4 to raise funds for purchase of new fire apparatus and equipment, according to reports.

Jasper, Tex.—A fire company is to be organized here shortly. Apparatus already purchased.

Middlebury, Vt.—Reports state special meeting was held to discuss matter of a site for erection of new fire station. H. Wright Caswell, Chief of Fire Dept.

Waltham, Mass.—Site at intersection of Prospect Hill Ave. and Prospect Hill Rd. for new fire station approved. Geo. L. Johnson, Chief.

Oroville, Calif.—City Council to receive bids August 4 for erection of fire station to house three engines.

Shawnee, Okla.—Plans are being worked out to provide for a north end sub-station for fire protection. Also reported that much of present equipment should be replaced.

Chelsea, Mass.—Fire Chief David Hudson recommended purchase of a new pumper at cost of $12,500, according to reports.

Ashtabula, Ohio.—An ordinance was presented to City Council authorizing the advertising of bids for purchase of new aerial ladder truck for fire department, according to reports.

West Jefferson, Ohio. — Village Council met in emergency session after recent fire and voted to purchase fire apparatus.

Bethlehem, W. Va.—Plans are being made for purchase of new fire truck, according to reports.

Wanted

Ex-Fire Chiefs in Central and Middle Atlantic states. If you can sell fire prevention and safety inspection service on a commission basis, write to Roscoe L. Smith, Ambler, Pa.
7-23

New Trade Literature Received

The following literature descriptive of up-to-date methods and equipment for fire departments, has just been issued for general distribution, and can be procured by writing to the concern mentioned. Those desiring additional trade literature in which they are interested can use our regular "Information for Buyers" pages, listed in the Advertising Index.

Hazard Insulated Wire Works, Wilkes-Barre, Pa.—"Armored Underground Cable," twenty-four pages and cover, containing photographs, tables and list of 1,000 cities that have installed Hazard cable. "Hazard Electrical Building Wire," a twenty-three-page illustrated catalogue; "Hazard Spiralweave," ten pages and cover, illustrated and the applications of this weave on cables.

Body Guard Manufacturing Co., St. Joseph, Mo.—A twelve-page catalogue illustrated in color on firemen's service apparel, boots and rubberproof coats. It also contains three pages of civil service examination questions and answers reprinted from FIRE ENGINEERING.

Department and Other Reports Received

New Rochelle, N. Y., Fire Department—Annual report of Chief Walter Jones; nineteen pages and cover.

Railway Fire Protection Association—Proceedings of the sixteenth annual meeting held in Toronto, Ont., Canada; 207 pages and cover.

Water Commissioners, Athol, Mass.—Twenty-fourth annual report of the Water Commissioners; twenty pages and cover.

New Pumper Delivered to Lakefield, Ont.

A 600-gallon (Imperial) Bickle pumper has been delivered to Lakefield, Ont., Canada. It is equipped with a 33-gallon (Imperial) chemical tank. Purchase of the machine was financed by an issue of ten-year bonds. Chief Allan H. Clark is very proud of the new pumper.

CONVENTION DATES

July 29-31—INDIANA FIREMEN'S ASSOCIATION. 13th Annual Convention, Lafayette, Ind. Secretary, Clem Smith, Fire Headquarters, Terre Haute, Ind.

July 30-31—CENTRAL NEW YORK FIREMEN'S ASSOCIATION. 37th Annual Convention, Skaneateles, N. Y. President, C. W. McCray, Waverly, N. Y.; Secretary, T. J. Murray, Cortland, N. Y.

July 31-Aug. 1-2—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, San Francisco, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Street, San Diego, Cal.

August—MAINE STATE FIREMEN'S ASSOCIATION. 3rd Annual Convention, Bangor, Me. (Date to be set later.) Secretary, Earl E. Pratt, Auburn, Me.

August—UTAH STATE FIREMEN'S ASSOCIATION. 23rd Annual Convention, Provo City, Utah. (Exact date to be decided later.) Secretary, Charles A. Canning, Midvale, Utah.

Aug. 6-7—CUMBERLAND VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 30th Annual Convention, Shippensburg, Pa. Secretary, C. L. Jacobs, Waynesboro, Pa.

Aug. 6-8—WASHINGTON STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, Kelso, Wash. Secretary, H. S. Jenkins, Bellingham, Wash.

Aug. 12—MASSACHUSETTS PERMANENT FIREMEN'S ASSOCIATION. 19th Annual Convention, Taunton, Mass. Secretary William F. Thomas, Worcester, Mass.

Aug. 12-14—WISCONSIN PAID FIREMEN'S ASSOCIATION. 23rd Annual Convention, Two Rivers, Wis. Secretary-Treasurer, William H. Schultz, Sheboygan, Wis.

Aug. 12-15—WYOMING STATE FIREMEN'S ASSOCIATION. 4th Annual Convention and Tournament, Caspar, Wyo. Secretary, Chief Justin H. Patrick, Laramie, Wyo.

Aug. 15-16—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 47th Annual Convention, Pyramid Lodge, 1035 State St., Bridgeport, Conn. Secretary, D. W. Harford, 10 Chestnut St., South Norwalk, Conn.

Aug. 19-22—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 58th Annual Convention, Nyack, N. Y. Secretary, Fred A. Davis, Drawer X, Fort Edward, N. Y.

Aug. 25-27—ARKANSAS STATE FIREMEN'S ASSOCIATION. 9th Annual Convention, McGhee, Ark., Secretary, H. D. Compton, Central Fire Station, Little Rock, Ark.

Aug. 27-29—VIRGINIA STATE FIREMEN'S ASSOCIATION. 44th Annual Convention, Phoebus, Va. Secretary, E. K. Landis, Pulaski, Va.

Sept. 1-4—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 37th Annual Convention, Oakland, Cal. Secretary, Jay W. Stevens, 1014 Merchants' Exchange Building, San Francisco, Cal.

Sept. 2-4—KENTUCKY FIREMEN'S ASSOCIATION. 11th Annual Convention, Paducah, Ky. Secretary, Capt. S. G. Render, 940 Starks Bldg., Louisville, Ky.

Sept. 2-5—DOMINION ASSOCIATION OF FIRE CHIEFS. 22nd Annual Convention, Port Arthur, Ont. Secretary, Chief James Armstrong, Kingston, Ontario, Can. Exhibit Space, Chief A. S. Kapelle, Stratford, Ont.

Sept. 9-11—ILLINOIS FIREMEN'S ASSOCIATION. 43rd Annual Convention, Peoria, Ill. Secretary, Assistant Chief Roy W. Alsip, Fire Department, Champaign, Ill. Exhibits, Chief Albert Herring, Fire Department, Murphysboro, Ill.

Sept. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 58th Annual Convention, Hotel Royal Alexandra, Winnipeg, Man., Canada. Recording Secretary, Chief James J. Mulcahy, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee. Chief Charles Alt, Fire Headquarters, St. Louis, Mo. Hotel Reservations, Chief D. A. Boulden, Winnipeg, Man.

Sept. 16-17—IOWA FIREMEN'S ASSOCIATION. 53rd Annual Convention, Boone, Ia. Secretary, Paul Soener, Independence, Ia.

Sept. 16-18—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, Pittsfield, Mass. Secretary, Daniel J. Looney, Room 1043, Old South Bldg., Boston, Mass.

Sept. 19-20—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 53rd Annual Convention, Auditorium, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 23-25—NATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS and Medical Directors of Civil Service Commissions. 9th Annual Convention, New York City. President, Dr. Harry M. Archer, Honorary Medical Officer, N. Y. F. D.; Secretary, Dr. Arthur Wildman, New York Municipal Civil Service Commission, New York City.

Sept. 24-25—MISSOURI STATE FIREMEN'S ASSOCIATION. Annual Convention, Trenton, Mo. Secretary-Treasurer, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis.

Oct. 7-9—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 51st Annual Convention, Hotel Americus, Allentown, Pa. Secretary, Charles E. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 8-9—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. 2nd Annual Convention, Sheboygan, Wis. Secretary, Chief Arthur J. Rahn, Fire Department, Two Rivers, Mich.

Oct. 15—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular meeting, and Mayors' Night. Fire Headquarters, Mt. Kisco, N. Y. Secretary-Treasurer, E. Riviere, Fire Headquarters, Larchmont, N. Y.

Oct. 21-23—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 49th Annual Convention (2d in year), Scottsbluff, Neb. Secretary-Treasurer, H. A. Webbert, Kearney, Neb.

Oct. 21-23—RAILWAY FIRE PROTECTION ASSOCIATION. 17th Annual Convention, St. Louis, Mo., Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

November—SONOMA COUNTY FIREMEN'S ASSOCIATION. Annual Convention. Petaluma, Cal.

May 11-16, 1931—NATIONAL FIRE PROTECTION ASSOCIATION. 35th Annual Meeting, Toronto, Ont., Can. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

Fire Station Closed in Ironton, Ohio—Fire Station No. 3 was closed in Ironton, Ohio, by the city manager as part of the city's economy move. The equipment was moved to the Central Station. No. 1 station is also to be closed. The department has been reduced to a personnel of twelve men.

BRAXMAR BADGES

Standard for Fifty Years

1879 1930

OFFICIAL BADGE

14K Gold, $25.00

Rolled Gold, $5.00

C. G. BRAXMAR CO.

242 West 55th St., New York

CRACKERJACK FIRE HOSE

The hose with an unsurpassed reputation for QUALITY and SERVICE that has made it the STANDARD of the WEST for over 25 years.

COMPLETE INFORMATION UPON REQUEST

WRITE FOR THE
Crackerjack Fire Ax
MADE OF RUBBER
A Dandy for the Kiddies

THE AMERICAN RUBBER MANUFACTURING CO

Factories and General Offices

OAKLAND, CALIFORNIA

Sales Offices

San Francisco
Matson Bldg.

Portland, Ore.
602 Bedell Bldg.

Los Angeles
458 So. Spring St.

Kansas City, Missouri
5547 Lydia St.

Boise, Ida.
P. O. Box 1432

Salt Lake City, Utah
149 W. Second So. St.

Spokane, Wash.
112 So. Monroe St.

FIRE RAGES

when time is lost—!

Precious seconds, yes minutes, are often wasted when fire breaks out.

Most of this delay is due to a weak fire alarm signal—either it is not heard or it is slow in rousing volunteers. Some cities have no fire alarm signal at all.

But the piercing roar of the Fedelcode Siren gets fire fighters out on first blast—gets men on the job early with no loss of time.

FEDERAL ELECTRIC CO.
8702 SOUTH STATE STREET
CHICAGO, ILLINOIS

Check Fire Losses with—

FEDELCODE *Sirens*

Safeguarding Nitrocellulose Films

(Continued from page 608)

given for the children of the neighborhood. During one of the shows the film slipped from the reel guard and the boy stopped the machine to make the necessary adjustments without turning off the light, and the film ignited immediately. The boy told his audience to leave while he extinguished the fire. All of the children escaped directed by the boy operator, when he noticed his sister was not among them. He dashed back to find her and was overcome by the fumes. The Fire Department was hastily summoned and on their arrival the firemen donned gas masks, and brought them both out. They were rushed to the hospital where both died soon after.

Contributing Defects—Home projection machines should be approved by the Underwriters' Laboratories and only slow burning film used in connection therewith.

Naval Radio Station Barracks, Bar Harbor, Me., January 19, 1923

The building involved was used for barracks for officers with a recreation hall on the upper floor. The fire originated in the motion picture booth. Trouble was experienced from a defective film and one of the two operators removed the shield between the projection light and the film before starting the film and it immediately burst into flame. One of the operators removed the film from the projection machine and cast it blazing out of the window. The two men escaped into the loft through an exit in the ceiling of the booth. One man was able to break through the ceiling and drop to the floor below and escape. Others in the audience escaped by jumping out of windows and the deep snow fortunately caused them to escape injury.

Contributing Defect—Careless handling of film during projection.

Fire Caused by Poor Care in Transporting Film Scrap, Boston Subway, January 3, 1925

A manufacturer of brushes used scrap film as an ingredient for cement. An employee of the brush company secured some scrap film from one of the well-known film exchanges and placed it in a burlap bag and boarded a subway train back to the plant. The burlap bag with its highly flammable contents was thrown down under the car seat so that the film came in contact with the electric car heater. The heat soon started decomposition of the film and fire started with a blinding flash sweeping the entire car which was well filled with passengers. Fortunately all escaped with their lives by breaking the windows and the car was emptied in less than three minutes although the damage was done in less than one-half this time. Practically all of the passengers were severely burned.

Cleveland, Ohio, May 15, 1929

A Cleveland Clinic fire in which about 121 persons lost their lives and fifty required hospital treatment from the effects of the gas, is one of the greatest catastrophies in a film fire. A very complete report of this fire was made by the National Board of Fire Underwriters, and the Ohio Inspection Bureau. Briefly, the fire originated in the basement of the four-story and part basement fire resistive clinic building, in a portion used for the storage of x-ray film. Various theories as to the cause have been advanced; a low pressure steam line had developed a leak shortly before and had been uncoverd to repair the leak, and it has been suggested that sufficient heat may have been generated to start decomposition of the film; the possibility of a lighted cigarette or match may have been dropped on or near the films by someone who had entered the room shortly before; perhaps the most widely accepted theory is that the films were ignited by heat from an incandescent lamp suspended in front of the shelves containing the film.

The gases formed by decomposition of the films penetrated to the upper floor through 19 pipe chases in the walls which opened into a pipe tunnel running around the basement of the building. The exits from the building were blocked by burning gases and poisonous brown vapors produced by the decomposition of films. An explosion occurred which tore out the skylights and partitions, clearing the building of the vapors, after which people could be seen at the windows. This was the first indication that there were such a large number of people in the building at the time of the fire. Rescue work was started immediately, lifting victims through a small skylight over the front stairs to the roof where attempts were made to revive them and every available ladder was used taking people from the windows.

Hose lines were used through windows in the rear stairway and elevator shaft. The first alarm was sounded at about 11:30 a. m. followed by subsequent alarms and by 1:15 p. m. everyone had been removed from the building and the fire was practically extinguished.

Rescuers found the dead and dying piled in stair landings and in the hallway at the front elevators. By far the greatest number of victims were found on the third floor.

The film storage room in which it was variously estimated from 4200 to 10,000 pounds of film were stored, was neither properly vented nor provided with sprinkler protection. The film room doorway, leading to the basement was provided with a Class "C" tin clad fire door but the closing device was not operative at the time of the fire. There was a direct communication from this room to the 4 x 6 pipe tunnel which made a complete circuit of the unexcavated portions of the basement and from which the pipe ducts extended through partitions to the roof space.

Conclusion

Experience has shown that in order to obtain satisfactory protection for storage of nitro-cellulose film, it is necessary to have adequate city ordinances. The value of any ordinance is dependent on the degree of enforcement. Regular inspections should be made by specially delegated members of the Fire Department. In making these inspections, special attention should be paid to condition of all fire extinguishing agents which may be provided. If sprinklered, see that all control valves are open and water supplies properly maintained. Be particularly watchful for large quantities of loose film stored outside of vaults. Lax care in handling film can nullify the good effects of properly arranged storage vaults.

The electrical equipment should be carefully scrutinized to see that no temporary, self-installed, electrical extension work has been put in. Portable electric lights on extension cord have been serious offenders in the past. In making these inspections, the life hazard must always be considered and all exits carefully examined to see that they are unobstructed and ready for instant use. There is no greater handicap to fire department officer in charge of a fire in a building involving film storage than lack of familiarity with the layout of the building. Unless fully conversant with the location of film vaults, type of fire protection and equipment provided, an officer would feel very hesitant about ordering his men into a burning building of this type, where dense poisonous fumes make it impossible to ascertain the exact location of the fire, because the first duty of an officer is to safeguard the lives of those under his command. Unless thoroughly familiar with the risk, an officer would be placed in the unfair position of being forced to make a decision affecting the safety to life of his men, which his knowledge and experience would not justify.

Past records indicate that where fire resistive, well vented vaults are provided and the building equipped throughout with an approved well maintained system of automatic sprinklers, the storage of nitro-cellulose films can be rendered reasonably safe.

Our problem thus resolves itself into two main items: First passage of ordinances for proper safeguarding of this hazard with means for enforcement provided, to safeguard all new buildings erected for this class of occupancy; second, regular inspections of existing buildings erected prior to passage of ordinances thoroughly familiarizing members of the Fire Department with the risks and eliminating all unnecessary hazards. Then should fire occur it can be handled most intelligently by firemen thoroughly conversant with the risk.

(Excerpts from a paper read before the annual Illinois Fire College.)

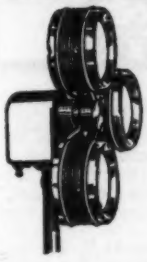
Oil Tank Struck by Lightning

During a severe storm, lightning struck a 55,000-barrel oil tank on a tank farm near El Dorado, Ark. Firemen worked all night long to prevent the blazing oil from spreading to other tanks and nearby houses. Five holes were blown into the metal tank by a three-inch cannon to drain the oil into earthen pits. The oil was thus prevented from boiling over and spreading to other property. The damage was estimated at $80,000.

Fined for Refusing Aid

Two men who refused to fight a woods fire near Royal Oak, Md., were arrested and fined $11.45 each. The fire had made such headway that St. Michaels firemen were called. Another fire was discovered in the evening and the fire warden called on these two men to help in fighting the flames. They refused. This is the first case of its kind in the history of the county.

The most Effective Combination of Warning Signals



BUCKEYE "ROTO-RAYS"—A silent signal of unquestioned effectiveness to protect your apparatus and your firemen against accidents.

At night these three revolving red signal lights make identification of the apparatus instantly possible as far as light is visible.

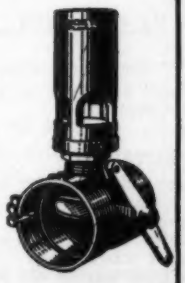
Insist upon having "Roto-Rays" on the next piece of apparatus you buy. It's just as essential as the whistle, the siren or the bell. Easily installed on apparatus now in service.

The Powerful BUCKEYE EXHAUST WHISTLE predominates in over 600 fire departments where serious traffic problems exist.

The shrill blast of a Buckeye Whistle effectively carries far ahead of the apparatus. Its sound is distinctive and extremely penetrating.

"Roto-Rays" and a Buckeye Whistle form the most effective combination of Warning Signals in existence.

Prices and full particulars upon request.



Buckeye Iron & Brass Works
326 E. Third St. Dayton, Ohio

BUCKEYE
WARNING SIGNALS THAT WARN

THINK of FIRE HYDRANTS in Terms of Cost of Repair and Replacement

MATHEWS MODERNIZED HYDRANT

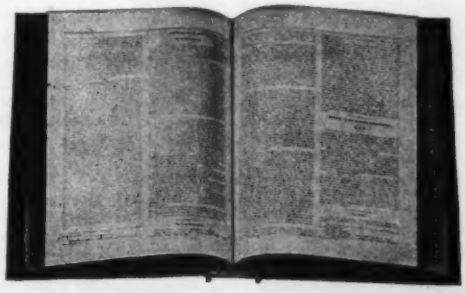
When Broken is Easily Replaced Without Digging

INTERCHANGEABLE with old installations. Minor repairs or complete barrel replacement can be made without shutting off the water flow completely, leaving some water available for household and industrial use.

The completely revolving head, to face nozzles in any direction, enables quick, easy installation.

Before purchasing hydrants, be sure to find out all about the Mathews Modernized Hydrant.

R. D. WOOD & CO.
In business continuously since 1803
400 Chestnut St., Philadelphia, Pa.
Engineers — Iron Founders — Machinists



Preserve Your Copies

Every issue, as you know, is packed full of interesting and authoritative data, ideas, news, etc., that you like to keep handy for ready reference. Why not keep them all together in a binder? You'll find this special one a great convenience. The cost is only $1.75 and many of our subscribers are already using them. What about you?

Address:
Case-Shepperd-Mann Pub. Corp.
Book Department
24 W. 40th St., N. Y. C.

Name .....
Position .....
Address .....

Minimize Water Damage • *Reduce* Insurance Rates

Shuredry
Waterproofed
Salvage Covers

City of Charleston
WEST VIRGINIA

Nov. 16, 1929

Fulton Bag & Cotton Mills,
Atlanta, Ga.

Gentlemen:-

The "SHUREDRY" salvage covers I purchased from you some time ago are doing just what you recommended them to do. They have paid for themselves several times in reducing the water damage.

I believe they are one of the most important things in a department with the largest saving, and the smallest purchase cost.

Very truly yours,

Write for Samples and Prices

Fulton Bag & Cotton Mills
St. Louis Atlanta Dallas
Minneapolis Brooklyn New Orleans Kansas City, Kan.

FALSE ALARMS

TIME OUT

Two men of Station 8 developed an intense hate for each other and they carried the grudge even into the fire house. Because of some trivial matter, when no one was looking, they squared off ready for a fist fight.

"You're scared to fight."

"I ain't, but the rules won't let us," was the reply.

"An' how'll the officer ever know."

"They'll see the ambulance comin' for you."

And among those who profit by the misfortune of others are golf-ball manufacturers.

FORCE OF HABIT

The dance was a success. When a few of the boys came down to the hall the following morning, they compared notes.

"How'd you like that little blonde from the department story that I had?"

"Kinda nice! You took her home, didn't you?"

"I'll say I did, and I kissed her good night, too."

"What did she say?"

"Oh, she just said, 'Will that be all?'"

It seems that in some way the gas stove became disconnected and a young lady was overcome by gas while dressing. In fact, she nearly said good-by to this mortal life. Who rescued her? Why, some of the truck company boys just across the street who had been watching her.

ARRIVAL ANNOUNCED

An Englishman who had just become accustomed to the American way of driving on the right hand side of the road, was approaching a suburban fire station. As he was driving along he saw near the house a large sign, "Drive Slowly. This Means YOU."

The Englishman stopped in surprise and exclaimed, "My word, how did they know I was here?"

Oscar, who is around the station most of his idle days, allows that a patrol wagon isn't much of an automobile but it'll do in a pinch.

WELL DESCRIBED

Some girls are very partial to uniforms. In this instance the fireman rescued a girl from an upper floor. That was months ago and a romance followed.

"Well, dearest, what did your father say when he found that I wanted to marry you?"

"At first he demurred because he didn't want to lose me, but I explained that he could have me, and that he would have you to boot."

"That sounds all right," said the hero, "except for that 'to boot' part."

MINUS QUANTITY

A young college student was home from school with an over-decorated car of little re-sale value. He was taken to court for refusing to pull up at the curb to permit fire apparatus to pass. After a night in the city jail, he appeared before the city magistrate who heard the case.

"Young man," he asked, "Have you anything to offer before the Court passes sentence?"

"No, your Honor. My lawyer took my last dollar."

He who loves but will not wed
May tell it to the Court instead.

OTHER OBJECTIVES

In the mid-western cities where there are municipal courses, a large part of the population has taken to golf. The chief's driver was one fan and a telegraph operator was the newest recruit. The two went out on the links together, happy at having a holiday. After a few holes, the driver remarked:

"Jerry, you'll never learn to play by watching me."

"I'm not watching you," said the operator. "I'm going fishing as soon as you dig up a few more worms."

And the only trouble about going to a beach for the summer is that when you track in a lot of sand, you can't blame it on the spinach.

WRONG TYPE

A ladder truck in rounding a corner had just sideswiped a car that had stopped to park. A policeman had seen the accident and rushed over. He saw a man standing near the car who he thought was the driver.

"Say, where the devil is your tail light?" he roared.

The innocent bystander looked up at him.

"What do you think I am — a bloomin' lightning bug?"

LIGHT A LUCKY

Once in a while some man gets into the department who has a habit of over-indulging. Pat O'Brien was one. He had been reprimanded several times and finally was ordered to appear before the commissioner.

His Honor looked over the record sheet and said to the victim:

"Sir! You are charged with habitual drunkenness. What excuse have you to offer?"

"None, Commissioner, other than a habitual thirst."

NOT FIREPROOF

The draftsman returned to the office with sad, sad news.

"The building department has rejected our plans for the Mausoleum," he told the senior member of the firm of architects.

The architect was shocked. He had worked over the sketches for many long days and he had considered the design as his best Mausoleum.

"Why did they reject it?" he asked.

"Because there were no fire escapes

We mourn the passing of the old-fashioned radio set. It used to be silent at least while the battery was being recharged.

SO SAY WE ALL

Jerry was missed at the station, because of his ready wit and agreeable disposition. But then, no one denied that Jerry deserved his well earned annual vacation, spent this year at the beach. However, after the customary two weeks, he returned for duty, brown as a coffee bean.

"How was your vacation at the beach?"

"Oh, the first tan days were the hardest," replied Jerry.

See no evil, hear no evil, speak no evil, and you'll never be a newspaper man.

SELF AFFLICTED

The chief had returned from his first trip to Europe. He came back loaded with trinkets for his many friends. Upon his first day at headquarters they called to inquire about the trip, and maybe to receive the gifts.

"Did you see much poverty in Europe?"

"Yes, indeed," replied the chief; "a good deal. In fact, I brought some back with me."

Fire Department Term Illustrated: Night Pants

Drawing by "Art" Espey

COOPER ELECTRO-PNEUMATIC ALARM

In use for Years

Unlimited life

Nothing to get out of order

Powerful—Reliable—Instantaneous

Operates on only 1/10 amount of air required by whistles. Quickest device for coding. May be connected to present system and will operate if power is temporarily off. Produces a powerful and distinct sound audible for miles.

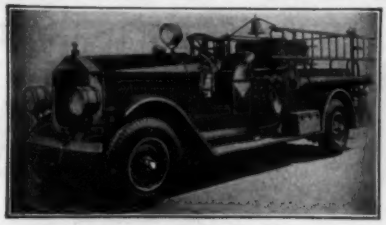
Manufactured by

CLARK COOPER

153-159 Jefferson St. PHILADELPHIA

MAXIM FIRE APPARATUS

All Types



All Sizes

If you are thinking of buying new apparatus shortly, be sure to get all the facts about MAXIM before you decide.

Send for complete information

MAXIM MOTOR COMPANY, Middleboro, Mass.

Metropolitan Sales Agents:

The Woodhouse Manufacturing Co., 156 Chambers St., N. Y.

12,000 gallons of water displaced per hour with this siphon.

15 foot lift, 40 pounds pressure at siphon.

3,000 gallons of water used.

15,000 gallons gross, 12,000 gallons net.

A protection to the pumper.

30-Day Free Trial. Write for circular. Over 400 in service.

P-B PRODUCTS CO., Inc.

2155 Blendon Pl., St. Louis, Mo.

D. E. Parks, Pres.

when!

You are interested in Fire Fighting Equipment consult:

BOYER

Builders of equipment to meet your requirements. Specializing in Apparatus for Rural Fire Fighting.

BOYER FIRE APPARATUS COMPANY

Logansport, Indiana

WRITE FOR MORE

Information About

The Smith **INDIAN** Fire Pump

HEAVY BRASS PUMP 5 GALLON TANK WITH LARGE BRASS STRAINER AND BRASS COVER

Used and endorsed by rural and city departments everywhere. Quickest, most economical way to extinguish grass, awning or roof fires.

Carrying rack clamps right on truck.

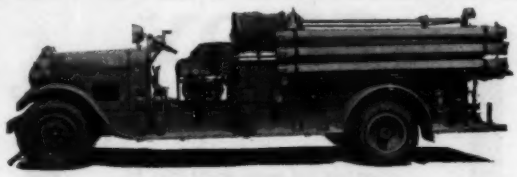
D. B. Smith & Co.

412 Main St., Utica, N. Y.

Pacific Coast Agts.:

FIRE PROT. ENG. CO.

369 Pine St., San Francisco



HAHN

For dependable, efficient service, Hahn apparatus enjoys a most excellent reputation. Triple combination pumpers in all capacities up to 750 gallons, Chemical and Hose Trucks, City Service Trucks and Squad Wagons.

Full information upon request

Hahn Motor Truck Corporation

ALLENTOWN, PA.

20 Years' Experience Building Fire Apparatus

FIRE DEPARTMENT SUPPLIES OF EVERY DESCRIPTION

A.B.C.

Forest Fire Fighting Water Spreaders & Equipments

FOR FIRE DEPARTMENT AND PRIVATE HOME PROTECTION

Write for illustrated circular.

A.B.C. Fire Prevention Mfg. Co.

392 Hudson Street New York City

MORSE

FIRE BOAT EQUIPMENT

Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

Write for Catalog

Andrew J. Morse & Son, Inc.

221 High St. Established 1837 Boston, Mass.

BODY GUARD

FIRE FIGHTERS CLOTHING

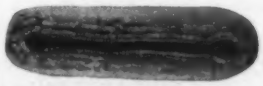
GIVES real protection and comfort in any weather and at any kind of fire. Designed to permit freedom of action, eliminating cumbersome excess weight. Made of materials that withstand the hardest kind of usage. Bodyguard apparel is used by Firemen everywhere.

BODY-GUARD BRAND

THE BODY GUARD MANUFACTURING CO.
ST. JOSEPH - - MISSOURI

BI-LATERAL FIRE HOSE

THE BI-LATERAL FIRE HOSE CO.
Canal St. Station
110 North Franklin Street
Chicago, Ill.



If you purchase BI-LATERAL FIRE HOSE it will increase the value of your hose-carrying apparatus more than the cost of the load of Bi-Lateral Fire Hose.
We can load from 25% to 33⅓% more and when coupled with rocker lug couplings the Bi-Lateral hose makes an apparatus one to be proud of and as near perfect as possible to do quick and efficient service.

JACOB REED'S SONS

Founded 1824 by Jacob Reed

FIREMEN'S UNIFORMS

Thoroughly tailored of especially selected fabrics. Uniforms that look well, wear well and that will give entirely satisfactory service.

Reed's Uniforms are most economical because they represent full value for the amount expended.

Write for catalog and prices.

1424-1426 Chestnut St., Philadelphia, Pa.

Baker Fabric

A mass - woven jacketed hose with an exclusive weave which resists water soaking. Dries faster — equally pliable, wet or dry. Write for details.

MANUFACTURED EXCLUSIVELY BY
HEWITT - GUTTA PERCHA
RUBBER CORPORATION
BUFFALO, N. Y.
(Also makers of single and double jacket hose)
"Territories Available"

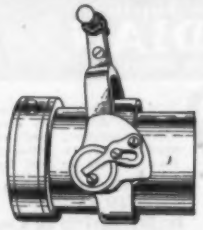
EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.
James B. Clow & Sons, Chicago Agents

The SHIFT COUPLER



Built to CONNECT and DISCONNECT instantly!

Any size hard suction

Years of Service
Prove it the Best

National Standard Threadless Coupling Corp.
215-217 Beach 122nd St., Rockaway Park, N. Y.
11 W. 42nd Street New York City

G

The new Rensselaer Catalog "G" is now ready for distribution. Officials desiring the latest information on RENSSELAER VALVES and COREY HYDRANTS are invited to fill in and mail the coupon below.

RENSSELAER VALVE CO.,
TROY, NEW YORK.

Send Catalog "G" to

Name .....
Title .....
Street .....
City .....

New Victor Gas and Fume Mask

Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

Over 5,000 Victor Gas Masks in Service

Full Line Fire Dept. Supplies and Equipment

New 43 Edition Catalog on Request

The Woodhouse Mfg. Co., Inc.
156 Chambers St., New York
D. A. Woodhouse, Pres. and Gen. Mgr. — George J. Kuss, Vice-Pres. and Treas.

YOUR CATALOG PAGE

Fire Protection Equipment and Supplies

1 Acid Siphons.
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Caps, Firemen's.
23 Chains, Non-Skid Fire Apparatus.
24 Chassis for Fire Apparatus.
25 Chemical Engines and Tanks.
26 Chimney Cleaning Compounds.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equimpent Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Calcium Chloride.
35 Extinguishers, Carbon Dioxide.
36 Extinguishers, Soda-Acid.
37 Extinguishers, Carbon Tetrachloride.
38 Extinguishers, Foam.
39 Extinguishers, Powder.
40 Fire Boat Nozzle Equipment.
41 Fire Department Supplies, General.
42 Fire Exit Devices, Door Opening.
43 Fire Alarm Posts.
44 Fire Escapes, Portable.
45 Fire Escapes, Rigid.
46 First Aid Equipment.
47 Flare Lights.
48 Flashlights, Hand.
49 Foam Liquid for Extinguishers.
50 Gas Masks and Respirators.
51 Gas & Smoke Helmets.
52 Gasoline & Oil Handling Equipment.
53 Goggles, Firemen's.
54 Helmets, Metal, etc.
55 Hose Carts, Reels & Racks.
56 Hose Clamps.
57 Hose, Fire.
58 Hose, Chemical.
59 Hose Holders.
60 Hose Jackets.
61 Hose Standardization Tools.
62 Hydrant Draining Pumps.
63 Hydrants, Fire.
64 Jacks for Fire Trucks.
65 Jacks, Shoring & Prying.
66 Ladders, Fire.
67 Lightning Arresters.
68 Motorcycles, Fire Dept. Equipped.
69 Nets, Life.
70 Nozzles, Pipes & Misc. Brass Goods.
71 Packings, Pumps.
72 Pads, Pole Hole.
73 Paints, Fire Resisting.
74 Priming Ether, Motor.
75 Pumping Cars, Standard.
76 Pumping Cars, Foam.
77 Pumps, Fire Apparatus.
78 Pumps, Fire Service, Stationary.
79 Pumps, Portable for Fire Protection.
80 Record Books, Fire.
81 Relief Valves.
82 Reviving Apparatus, Oxygen.
83 Rubber Clothing.
84 Searchlights.
85 Shingles, Fire Retardant.
86 Shirts, Firemen's Special.
87 Sirens, Apparatus & Chiefs' Cars.
88 Sliding Poles.
89 Soda & Acid Chemicals.
90 Spark Plugs, Fire Apparatus & Motorcyles.
91 Squad and other Auxiliary Cars.
92 Sprinkler Head Shut-Offs.
93 Sprinkler Supervisory Service.
94 Sprinkler Systems, Automatic, Foam.
95 Sprinkler Systems, Automatic, Water.
96 Starters, Fire Apparatus, Automatic, Air.
97 Steam Fire Engines.
98 Tarpaulins & Fire Blankets.
99 Tetrachloride Chemicals.
100 Thawing Equipment, Hydrant.
101 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid.
102 Tractors.
103 Traffic Clearing Systems.
104 Triple Combination Pumping Cars.
105 Uniforms.
106 Water Towers.
107 Wheels, Cushion.
108 Whistles, Fire Alarm, Compressed Air
109 Whistles, Fire Alarm, Steam.
110 Whistles, Fire Apparatus.
111 Wrecking Trucks.

Help Yourself!

This page is here to make it *convenient* for you to get complete specifications and prices from *reliable* manufacturers of equipment needed for your department. It is *your* page to use freely without any obligation.

To get the information you want, just mail in the coupon below with your name and address and numbers that indicate the equipment on which you would like descriptive literature.

We will then notify rliable manufacturers of your interest in such equipment and request that they send you complete information. They will be a pleasure for us to help you in this way. No charge whatever! Help yourself.

FIRE ENGINEERING, 24 West 40th St., New York City
As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

Date.....

Nos. .....
Nos. .....
Nos. .....
Nos. .....

Name .....
Position .....
Street .....
City and State.....

For Information on Any Equipment Not Listed, Write on This Page or Use Separate Sheet

7-23

Saves time - *and costly hose*

No. 1. (Capacity 3 to 7 tons; weight, each, 72 lbs.)

No. 2. (Capacity 3 to 12 tons; weight, each, 118 lbs.)

Complete information and Prices on request.

It's often necessary to move apparatus at a fire. Automobile traffic hates to be held up by a line of hose stretched across the right of way.

Why ruin your hose by driving over it? Or waste valuable time cutting off and disconnecting?

The Wausau Protector is a big time and money saver—easy to handle and carry. Order a set today, or write us for particulars.

Wausau Fire Hose Protector Co.
1520 Harmon Place, Minneapolis, Minn.

Let the world's oldest and largest exclusive manufacturer of sirens solve your siren problems.

STERLING SIRENS

You will find in the Sterling line a siren for every purpose.

Sterling engineers are glad to give you their assistance.

STERLING SIREN FIRE ALARM CO., Inc.
61 Allen St. Rochester, N. Y.

JOHN H. CLAY, INC.

1320 Ridge Ave., Philadelphia, Pa.
Established 1864

Clay Automatic Door Opening Devices for Fire Station Doors Opening either In or Out. Save valuable minutes in getting to fires. Send for Bulletin.

Hedberg Super Sirens

"The World's Best by Test"

offer the world's greatest and most versatile range of choice involving sizes and methods of operation.

Write for descriptive matter showing sirens that have never lost in competition.

J. N. HEDBERG
321-49 W. REED ST.,
SAN JOSE - - - CALIFORNIA

The High Efficiency of HALE Rotary Pumps is due to:

1 The form of the patented Rotor Tooth.
2 Automatic Packing.
3 Four bearing pump shafts.
4 Stainless steel pump shafts.

The design of Hale pumps has been perfected through fifteen years of active experience, and has resulted in a rugged, highly efficient product.

HALE FIRE PUMP CO., INC.
CONSHOHOCKEN, PA.
Manufacturers of Rotary Fire Pumps.

LARKIN Fire Department Supplies

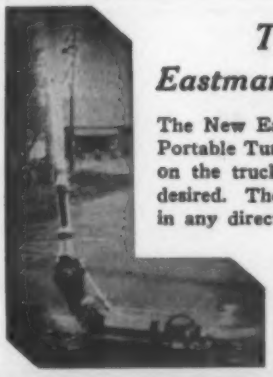
in Service Wherever Fires Are Fought

Our general line of equipment includes every fire department supply of merit.

Larkin shut off nozzles alone are in service in over 5,000 fire departments in U. S. and Canada.

Give us an opportunity of quoting on your next requirements. Let us send you our general catalog.

THE LARKIN MANUFACTURING CO.
Established 1898 DAYTON, OHIO



The New Eastman Deluge Gun

The New Eastman Deluge Gun is a Portable Turret Pipe that can be used on the truck or ground, as may be desired. The stream can be operated in any direction by one man.

Samuel Eastman Co.
Concord, N. H.

Fire Alarm Signals
Water Meters
Compounding Valves
Stops
Water Pressure Regulators

Presses for Lining Service Pipe with Cement

Union Water Meter Co., Worcester, Mass.
Incorporated 1868

ADVERTISING INDEX

Advertising Pays—in Fire Engineering

	PAGE
A.B.C. Fire Prevention Mfg. Co.	633
Ahrens-Fox Fire Engine Co.	605
American LaFrance & Foamite Corp.	*Inside Front Cover*
American Rubber Mfg. Co.	629
Bi-Lateral Fire Hose Co.	634
Body Guard Mfg. Co.	634
Boyer Fire Apparatus Co.	633
Braxmar Co., C. G.	629
Buckeye Iron & Brass Works	631
Clark-Cooper Co.	633
Clay, Inc., John H.	636
Darling Valve & Mfg. Co.	603
Eastman Co., Samuel	636
Eddy Valve Co.	634
Eureka Fire Hose Mfg. Co.	*Front Cover*
Fabric Fire Hose Co.	*Inside Back Cover*
Federal Electric Co.	629
Fulton Bag & Cotton Mills	631
Gamewell Company	606
Hahn Motor Truck Co.	633
Hale Fire Pump Co.	636
Hedberg, J. N.	636
Hewitt-Gutta Percha Rubber Corp.	634
Information for Buyers	**635**
Larkin Mfg. Co.	636
Mack Trucks, Inc.	*Back Cover*
Maxim Motor Co.	633
Morse & Son, Inc., Andrew J.	633
National Standard Threadless Coupling Corp.	634
P-B Products Co., Inc.	633
Peter Pirsch & Sons	638
Reed's Sons, Jacob	634
Rensselaer Valve Co.	634
Smith & Co., D. B.	633
Sterling Siren Fire Alarm Co., Inc.	636
Union Water Meter Co.	636
Wausau Fire Hose Protector Co.	636
Wood & Co., R. D.	631
Woodhouse Mfg. Co.	634

When Ordering New Equipment

Patronize the Manufacturers You Find Listed Above

They are leaders in their respective lines and are in position to take the best possible care of your requirements.

The fact that they are using advertising space in FIRE ENGINEERING indicates they want your inquiries and will be glad to submit specifications and prices without placing you under any obligations whatever.

They are ready and anxious to serve you courteously in every way possible. Be sure to write them for complete information when consi dering new purchases—and place your orders with them.

They are helping us make the paper better by their advertising. You can help them and help us and help yourself by giving them your business. Let's all pull together! All will benefit.

The Publishers

Longer Reach With Shorter Ladders

Apply the new Pirsch Lapless Extension, and make any extension ladder reach 4′ to 8′ higher — with no more overhang on apparatus. Or, cut down overhang 2′ to 4′ without shortening ladder reach. A great improvement. Write for particulars.

PETER PIRSCH & SONS CO.

KENOSHA, WISCONSIN

Every Fire Dept. Officer Should Have

These Three Books—*Packed Full of Practical Information*

Questions and Answers for Battalion and Deputy Chiefs

A 210 page book, fully illustrated, by Geo. J. Kuss, former Deputy Chief, New York Fire Department, and Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

A valuable book, not only for candidates for examinations for Battalion and Deputy Chief, but for every member of the department. The only book published which gives detailed methods of operating at large fires and the reasons for each move.

The following are a few of the important topics covered:

Detailed description of the proper procedure in fighting fires: 1. Size-up; 2. Calling of help; 3. Saving of life; 4. Covering exposures; 5. Extinguishing fire; 6. Overhauling. How to test motor fire apparatus. How the following types of fires should be fought: Large department stores, large hotels and rooming houses, large area residential fires, combination stores and apartments, motion picture film exchanges, tall office buildings, wholesale grocery stores and warehouses, group building fires, theatres, schools, factories, etc., and considerable other data.

Price—$2.15, postpaid.

Questions and Answers for Lieutenant and Captain

A 290 page book, fully illustrated, by Geo. J. Kuss, former Deputy Chief, New York Fire Department, and Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

Contains questions asked at promotional examinations in practically every city in the country where civil service examinations are held, with answers.

Includes chapters on Report Writing, How to Answer Examination Questions, Chemistry Examination Questions, Fire Fighting Questions, Overhauling, Ventilation, Fire Prevention, Inspection, Evolutions, Drills, Use of Apparatus, Rescue Work, and in fact all the topics covered by the fire department promotional examinations.

If you are studying for a promotional examination, you need this book, and if you are not studying for examination, this book will nevertheless give you a vast amount of valuable information on up-to-date fire methods.

Price—$2.65, postpaid.

Simplified Fire Department Hydraulics

A 200 page book, fully illustrated, by Fred. Shepperd, Managing Editor of FIRE ENGINEERING.

A complete course of instruction in fire department hydraulics. Designed to prepare fire department officers for hydraulic questions in examinations, such as required of all ranks.

Contains over 150 problems in fire department hydraulics asked in examinations in New York, Chicago, Milwaukee, Seattle, Newark, and a score of other large cities.

Treats fully all departments of fire department hydraulics, including pressure calculations, friction loss, engine and nozzle pressures, range of streams, capacities of engines, discharge from nozzles, hydrants, sprinklers, etc., etc.

Price—$2.15, postpaid.

Use This Convenient Coupon to Order Your Copies Today.

Book Department,
FIRE ENGINEERING,
24 W. 40th St., N. Y. C.

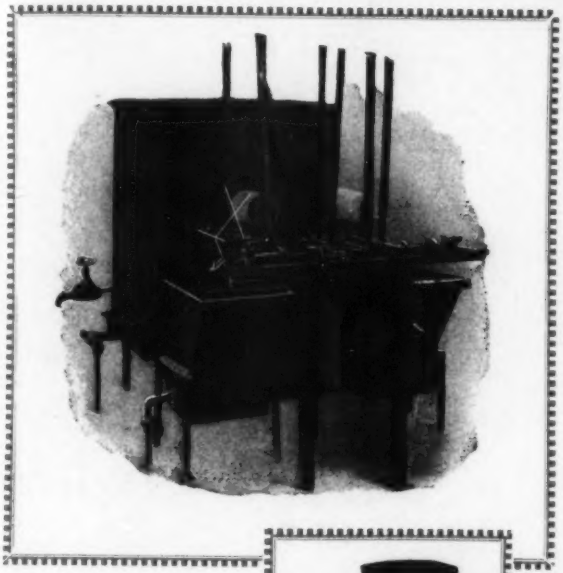
Please send me the books I have checked, for which I enclose money order (or check) for $.....

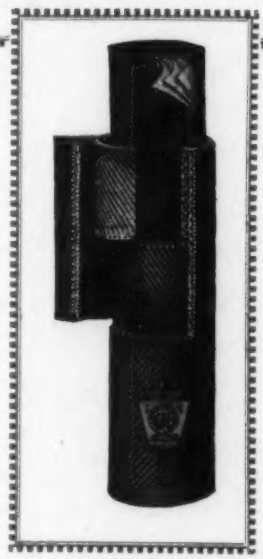
.....copies of Questions and Answers for Battalion and Deputy Chiefs ☐
.....copies of Questions and Answers for Lieutenant and Captain ☐
.....copies of Simplified Fire Department Hydraulics ☐

Name..... Rank.....

Address..... Date.....

There is a definite saving in buying—





FABRIC
WAX AND PARA GUM TREATED COTTON
FIRE HOSE

MANY chiefs have saved their cities and towns thousands of dollars through the intelligent recommendations or purchase of fire hose. Buying the right hose can save you trouble at fires and conserve your time even when at the station.

Here's how FABRIC Fire Hose saves your town money and your men's time.

It gives you the best of service year after year—much longer than ordinary hose—thereby saving money through long life. It saves trouble at fires because it does not kink or buckle, nor does it absorb water and become heavy and hard to handle Once back from the fire all you do is dry the water off, clean the hose and pack it.

THERE is a little booklet that has been prepared to help you buy hose more intelligently, by explaining how good fire hose is constructed. Sending for this booklet and reading its message will start you toward the ultimate saving effected through the purchase of this wonderful hose. Where shall we send you a copy?

FABRIC FIRE HOSE CO.

9-15 Park Place, New York, N. Y.
124-126 W. Lake Street, Chicago, Ill.

Atlanta	Columbus	Binghamton	Minneapolis	San Francisco	Pittsburgh
Boston	Dallas	Baltimore	Portland (Ore.)	Los Angeles	Newark

Mack

FIRE APPARATUS

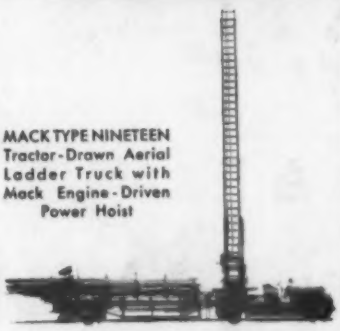
MACK TYPE FIFTY
500 Gallon Pumper

MACK TYPE NINETY
750 Gallon Pumper

MACK TYPE NINETEEN
1000 Gallon Pumper

MACK TYPE NINETY
City Service Hook and Ladder

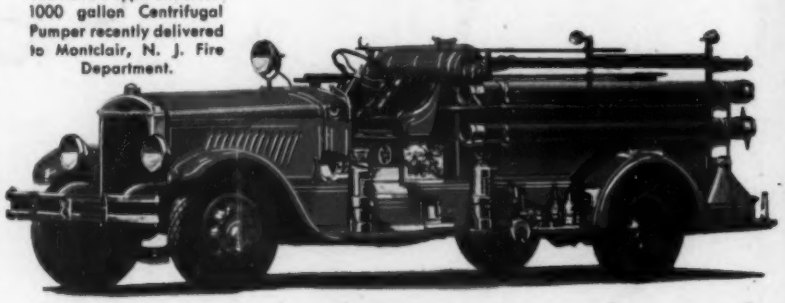
THE MACK ENGINE DRIVEN POWER HOIST



MACK TYPE NINETEEN
Tractor-Drawn Aerial Ladder Truck with Mack Engine-Driven Power Hoist

EACH UNIT in the complete line of MACK FIRE APPARATUS

The MACK Type Nineteen 1000 gallon Centrifugal Pumper recently delivered to Montclair, N. J. Fire Department.



. . . . is the result of MACK PROGRESSIVE FIRE ENGINEERING

Most fire apparatus exteriors have a common resemblance . . . but a comparison of specific details of design and construction shows vast differences. Mack power plants . . . Mack-built chassis . . . Mack transmissions, drives, brake equipment, axles, steering gear, and Mack-designed pumps . . . each is the result of Mack progressive engineering. This means that Mack-built fire apparatus combines the best results of 18 years of constant engineering effort to improve standards of power, speed, life and safety with a first hand knowledge of every fire-fighting requirement.

From 500-gallon capacity pumpers up, the complete line of Mack fire apparatus is all Mack-designed and Mack-built. Send for detailed information.

MACK TRUCKS, INC.
Fire Engine Division
25 Broadway, New York, N.Y.

Mack

More than 100 direct Mack Factory branches are equipped to service Mack Fire Apparatus in any emergency

TRUCKS · BUSES · FIRE APPARATUS · LOCOMOTIVES